TROPICAL DISEASES BUREAU.

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MISCELLANEOUS.

BRITISH GUIANA. **Report of Proceedings of the West Indian Medical Conference held in Georgetown, British Guiana, from 28th June to 13th July, 1921.** [BOASE (W. G.), President.]—152 pp. With 2 charts & 3 text-figs. 1921. Georgetown, Demerara: "The Argosy" Company, Limited, Printers. [Price not stated.]

This long report of the proceedings of the West India Medical Conference, lately held in Demerara, is full of interest, and if, as is natural, it gives preponderating expression to the experience afforded by British Guiana, it also represents in full measure the common and united interests of the West Indies, and touches many points of general interest to tropical medicine.

As questions of cardinal importance to these magnificent but still, perhaps, imperfectly-appreciated colonies, those relating to the establishment of a United West Indian Medical Service, to the development of a local auxiliary medical service somewhat similar to what used to be spoken of as the Indian subordinate civil medical department, and to the appointment of a Chief Sanitary Commissioner for the West Indies were fully discussed in the Conference. An auxiliary medical service of local growth, however, implies local schools of medicine and opens up other academical responsibilities for the discharge of which no machinery exists, so that although the proposal was generally approved it did not come to anything. It is to be hoped, however, that it will not be lost sight of. But the proposals for the unification of the West Indian Medical Services and for the appointment of a Sanitary Commissioner were adopted in formal resolutions for the consideration of the Home Government. The obstructions in the way of both these proposals, as was realized by several of the delegates, are of a political character—medical education can very well be carried on without political federation, but medical and sanitary administration cannot. Even an advisory Sanitary Commissioner-General, destitute of prerogative and devoid of the background of a Governor-General in Council, is a forlorn spectacle—the shadow of a dream.

This unanimous desire for an influential and independent Sanitary Commissioner is evidently not any reflexion on persons; it is, rather, evidence that the medical services of the West Indies are leavened with men of vision who understand that the full use and enjoyment of these fine colonies can only be attained under higher sanitary standards, evidence which is confirmed by the fact that a majority

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of the papers discussed at the Conference deal with some aspect of the public health and that most of these papers reach a high pitch of excellence. One of the most instructive is that by Dr. WISHART on some public health problems of Georgetown—a city almost in the zone of equatorial precipitation and entirely dependent on tidal drainage, where yet there is no pumping-plant for managing sudden flooding; a city where the best source of drinking-water is rain that has washed the roofs; where sewage awaits abominable removal in cesspools and open privies, and even a pail-system is a luxury and a limited privilege; and where—in natural harmony with all the rest—special antimosquito sanitation appears to be perfunctory, although 25 per cent. of the school children have been found to give a clinical history of filariasis. These are some of the problems—not altogether peculiar to Georgetown or to the West Indies—that Dr. WISHART has to deal with, not of course without some local sympathy and help, but in the face of an ignorant and apathetic proletariat. The imperfections of rural sanitation, again, are well described by Dr. De FREITAS in a paper entitled "Difficulties of Medical Practice in Country Districts"; the districts are too big; large areas of them are not under the control of any sanitary authority; and the country people, in unhealthy and overcrowded sites, live almost at the untempered mercy of Nature.

The interest in sanitary matters evinced by the Conference is further seen in papers (and discussions) on Infant Welfare in Georgetown by Dr. WISHART and by Dr. E. M. MINETT, on Hygiene and Sanitation in Primary Schools of British Guiana by Dr. ROSE, on water supplies and many other topics by Dr. E. P. MINETT, and in a valuable paper on food in relation to deficiency diseases by Dr. RICHARDS, of St. Lucia. Dr. WISHART describes the activities, mainly of a practical educative character, of the official Health Visitors, who supervise infants in the first year of life, and his figures show a reduced rate of infant mortality as a result of this supervision. Dr. E. M. MINETT deals with the work of the Baby-Saving League, a voluntary association which conducts clinics in town and country, subsidizes midwife-nurses in the country districts, and endeavours—notwithstanding the difficulty of getting women trained to maintain a high standard of precept and example—to raise the tone of obstetric and nursling practice among an ignorant and superstitious population. From Dr. ROSE's paper it appears that among school children in Georgetown 57·1 per cent. suffered from intestinal parasites, and 25·3 per cent. gave a clinical history of filariasis, and that among children in country schools 52·4 per cent. gave evidence of malaria infection, 21·2 per cent. gave a clinical history of filariasis, and 21·2 per cent. had intestinal parasites. From Dr. MINETT's careful paper on water supplies in Demerara, it is obvious that they are still of a primitive kind. From Dr. RICHARDS's paper one gathers that, speaking generally and excepting British Honduras, the food of the labouring classes in the West Indies is deficient in animal protein; to this deficiency of animal protein Dr. RICHARDS is inclined to attribute the prevalence of pellagra over other deficiency diseases in certain areas. The members of the Conference endorsed this view in a formal resolution recommending official encouragement of the rearing of "small" livestock and the subsidizing of fisheries.

Of papers (and discussions) on Preventive Medicine, those on Leprosy in its Public Health Aspects by Dr. HUTSON of Barbados, on Prophylaxis of Yaws by Dr. GIDEON of Jamaica, and on Alastrim by Dr. DICKSON of Trinidad, are particularly important both in their

local aspects and in general interest. In the first of these papers the question—not a novel one—of segregating all cases of leprosy in a single common leper-colony was one of those discussed; it was generally agreed, however, that this was one of those attractive proposals that lose their charms when critically examined; it was unanimously agreed that for the control of leprosy notification followed by effective segregation was essential, and that the so-called "arrested cases" of leprosy should not be discharged from leper-asylums under any conditions, and this agreement was expressed in resolutions for the consideration of the Home Government. Very interesting is the discussion on prophylaxis of yaws opened by Dr. GIDEON with a statement of the almost miraculous cures effected in Jamaica by one or two injections of salvarsan preparations, notably neokharsivan and novarsenobillon. This wonderful success aroused the hope that prophylaxis would be resolved into a simple and direct process of searching out and treating every case; this hope, however, was shattered by Dr. GIDEON's discovery that cases cured by these drugs are susceptible to reinfection. Dr. PATERSON stated that his procedure in Grenada was, after getting rid of the external manifestations of the disease by means of salvarsan, to continue treatment with mercury and pot. iod., and he hoped in this way to extinguish yaws in his colony. Dr. DICKSON, in his remarks on alastrim, objects to the disease being defined as a mild form of smallpox; for although it is mild in the sense of causing little constitutional disturbance and mortality, it is not mild as an eruptive spectacle. His argument is that since alastrim has a remarkable resemblance to smallpox and can be controlled by vaccination, it is only fair from the standpoint of prevention and quarantine to call it smallpox, for the present, and this conclusion was adopted in two resolutions.

Particular attention must be directed to a paper by Dr. KHALIL, one of the members of the Filariasis Expedition sent out by the London School of Tropical Medicine, on certain limitations of the septic tank. At the request of the Colonial Secretary for British Guiana, the Filariasis Expedition investigated the effluent of several septic tanks as to their helminthology, and it was repeatedly observed that the living eggs of ankylostomes (and other intestinal worms) were present in it.

Among other subjects of purely local interest discussed at the Conference, the following may be mentioned: the training of native hospital nurses, the improvement of the public hospital, the treatment of venereal disease, and malaria-carrying mosquitoes.

In addition to formal resolutions that have already been noticed, others were adopted on the training and control of midwives, the registration of still-births, the further promotion of infant welfare activities, the medical inspection of schools, the enforcement of antimosquito ordinances, the development and improvement of the Government bacteriological laboratories, the improvement of the public hospital, and on the necessity for a local hill station. The Conference did well in recommending that all officers appointed to the medical services of the West Indies should be required to take a course of instruction in one of the schools of tropical medicine in England. But it was hardly so happy in its further recommendation that research in the West Indies should be the peculiar preserve of the London School of Tropical Medicine. The fields of research, like the ocean, are "free for all men to deal withal, as very sufficient for all men's use, and large enough for all men's industry"; and the

resolution also forgets that one of the express desires of Sir Patrick MANSON, the Father of the Modern Science of Tropical Medicine and the Patriarch of the London School, was that the school course should put men in the way of investigating the causation of disease for themselves.

It must be mentioned, furthermore, that the Conference discussed a proposal to establish a medical journal for the whole of the West Indies, and passed a unanimous but unfurnished resolution in its favour. As some of the delegates observed, such a journal would be more appropriately consummative than precursive of medical union or at least of a medical college. Though some of the delegates foresaw editorial difficulties, it is doubtful whether the magnitude of those difficulties was realized.

A. Alcock.

MAURITIUS. **Report on Medical and Sanitary Matters in Mauritius,** by Andrew BALFOUR, C.B., C.M.G., M.D., B.Sc., F.R.C.P.E., D.P.H., Director-in-Chief, Wellcome Bureau of Scientific Research. —vii + 168 pp. With 1 chart, 3 maps, 5 plans & 130 illustrations. 1921. Printed by Waterlow & Sons, Limited, London Wall, London.

Those who have read some of Dr. Balfour's interim reports on sanitary matters in Mauritius will be prepared for the statement that it would require a sanitary revolution to make this beautiful and fertile island healthy. This verdict of a judicious expert has been corroborated by unbiassed observers—the clergyman and the objurgative mariner—whose views on mundane affairs are by no means always concordant; the one speaks of Mauritius as the "dirtiest-conditioned place among the colonial dependencies of Great Britain" and supremely distinguished for its "want of cleanliness"; the other describes Port Louis in terser language as "the filthiest port in the world." It is to be hoped that the advice embodied in this comprehensive and critical report, and the million pounds invested in the new Improvement and Development Fund, will end in the removal of these signally unanimous reproaches.

Of general interest in this report are the statistics of communicable diseases, of which malaria is the most important, *A. costalis* being the chief intermediary, though, as explained in a footnote, *A. maculipalpis* may be more dangerous than has hitherto been suspected. The only other species existent on the island is *A. mauritianus*, which probably is not formidable. The facts that the larva of *A. costalis* cannot endure shade and that the breeding-area of this species becomes much contracted during the winter season are regarded as hopeful from the preventive point of view.

The most destructive disease after malaria is pulmonary tuberculosis, to the spread of which the dark and ill-ventilated houses are conducive, while individual susceptibility is increased by the prevalence of ankylostomiasis, the recent investigations of KENDRICK having elicited the fact that about 60 per cent. of the population is infected with hookworm.

Dysentery and diarrhoea of course are prevalent, and enteric fevers are probably far commoner than is disclosed in official returns. Filariasis exists; its exact incidence is one of the many matters that need investigation. Influenza is favoured by the bad housing conditions, as was testified in the dreadful epidemic of 1919, which destroyed 11,000 people. Leishmaniasis is unknown in the island; as also, at

present, is rabies. Special attention was directed to leprosy; the measures for dealing with it are described as hopelessly antiquated and inadequate, and the leper asylum is stigmatized as a disgrace to the colony. It is possible that plague may be dormant among the rats; the examination of rats for plague was found to be insufficient. Schistosomiasis exists in Mauritius, but the molluscan intermediaries have not yet been detected. Scabies, naturally, is extremely common. It is more than likely that undulant fever exists, though it has not yet been recognized. The treatment of syphilis, generally, is not conducted on satisfactory lines. Worm infections generally, apart from ankylostomiasis, are in need of investigation.

Of non-communicable diseases, alcoholism, beriberi, and nephritis are particularly mentioned.

There is little to be said for the hospitals, dispensaries, and other institutions of the kind; like the medical staff, they are insufficient for the requirements. The problems of maternity and child-welfare have only recently claimed attention, and the question of training nurses and midwives seems not to evoke much interest. The sanitary state of the schools is described as disgraceful; but Dr. Balfour's trenchant criticism of sanitation in Mauritius has already been noticed in this *Bulletin* (*Sanit. Supp.* 1921, p. 216).

In the author's scheme for the reorganization of the medical and health department the claims of the Bacteriological Laboratory are vigorously upheld, and not without good reason, since it was not so very long ago that a Royal Commission, bent on retrenchment, "actually advocated the abolition of this most essential institution."

In this fine report—quite aside from its intrinsic virtues—the author has set up a new standard, and a standard which, if it be generally followed will help sanitary reports to a better appreciation and a better reputation than tradition has conferred on them. The type, the copious illustrations from half-plate photographs, the bibliography, the index—all are most admirable features. In short, the report might be adopted as one of the textbooks for students of administrative hygiene.

A. A.

O'Connor (Francis W.). **Some Results of Medical Researches in the Western Pacific.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1922. Mar. 16 & May 18. Vol. 16. Nos. 1 & 2. pp. 28–52. With 21 figs. (Discussion pp. 52–56.)

This unpretentious but interesting preliminary report, while confirming and supplementing some of Manson-Bahr's conclusions regarding the incidence and aetiology of filariasis in the islands of the Pacific, contains a mass of novel and careful observation on this and other matters which will be as useful to local administrative authorities as to future investigators.

The area of the report includes Samoa and the neighbouring archipelagos of Ellice and Tokelau, and the main feature of the report is an intensive study of filariasis. The primary object of the expedition for which the report accounts was to test the value of certain drugs—tartar emetic, salvarsan preparations, collosols, etc.—some of which loud Rumour had declared to have a curative effect in filariasis, and although the author shows that Rumour, as usual, had been "stuffing the ears of men with false reports," he has made good use of his opportunities in other directions.

As regards the local aetiology of filariasis, *Aëdes variegatus* (= *Stegomyia pseudoscutellaris*) is shown to be in all the islands the principal, if not the sole, intermediate host. In the Tokelau Islands, indeed, it was the only species of mosquito observed. The chief breeding-places of the insect are the emptied husks of the coconut (*Cocos nucifera*), holes of all sorts in trees, but particularly the deep holes dug in the trunk of the living coconut palm by the Ellice islanders for catching rain-water; and in Samoa young pods of the cocoa (*Theobroma cacao*) left hanging on the tree after being gutted by rats, and holes in rock in sheltered places where dead leaves fall into the water they contain. Such breeding-places could be controlled without difficulty. The adult insects harbour in the rank undergrowth of the prevalent coconut plantations, and this undergrowth is particularly dense and still in those atolls where the lagoons are becoming filled up and the dry lands are broad and compact and sheltered from the south-east trade winds.

In none of the islands investigated was any evidence of "periodicity" of microfilariae in the blood ever detected. None of the drugs tried—novarsenobillon, galyl, kharsivan, tartar emetic, stibenyl, collosols of copper, selenium, and manganese; quinine hydrochloride, emetine—had any effect on the microfilariae circulating in the blood, though undoubtedly clinical symptoms were sometimes alleviated by the rest necessitated by continued treatment. High temperatures had no effect on the microfilariae; in a case of typhoid occurring in a European infected with filaria the microfilariae withstood temperatures that frequently were above 104° F. and on three occasions rose to 105° F.

The filarial incidence, however estimated, is high in all these islands but is less in the Tokelau than in the other groups, because the conditions there afford the least hospitality to *Stegomyia pseudoscutellaris*. On the compact atolls of the Ellice group, with shallowing lagoons entirely, or almost entirely, encircled by dry land—the atolls that provide the maximum amount of cover for Stegomyia—the filarial incidence is extremely high, amounting in one atoll to 73 per cent. of the large number of the population examined.

Where filarial incidence is extensive and individual infection also generally heavy, there the largest number of cases of elephantiasis (both with and without concurrent microfilaria in the blood) are found. Where, as in the Tokelau group, filarial incidence is not surprisingly extensive and individual infection not remarkably heavy, there is no elephantiasis at all to be seen. The author's statistics clearly demonstrate the interconnexion in all these islands of filarial infection and elephantiasis.

An accidental infection from the bites of an infected Stegomyia occurred almost under the author's eyes. The bites, which were suspiciously severe at the time, had been on the arm, and about 43 days afterwards there occurred swelling and tenderness of the epitrochlear gland. The gland was excised and was found to be infiltrated with haemorrhages and studded with plots of eosinophile cells. About 156 days after the date of the bite a severe attack of lymphangitis involving the axillary glands and the whole arm occurred, the temperature rose to 100° F., and the eosinophile count was 6 per cent. Afterwards there were further attacks, one of which affected the epididymis on the opposite side, and thereafter until the author left the islands eosinophile counts were constantly high, 11·5 to 16 per cent.

The stools of over 575 individuals were examined, with the following results :—

No evidence of infestation by Cestodes or Trematodes was observed in any of the islands.

Infestation with *Necator americanus* was found to be almost universal among adults in the Ellice and Tokelau islands and extremely prevalent in Samoa (where also *A. duodenale* and *A. ceylanicum* were each found once). Evidence of this infestation is manifested in the general indolence and weariness of the people and in their little resistance to bacterial infection.

Ascaris lumbricoides, though extremely common in Samoa, was not detected at all in the Ellice group. The only circumstance not common to Samoa and the Ellice Islands is that in the latter there is a variety of coconut the sweet young husk of which, called *utagau*, is chewed like sugar-cane. The author thinks that utagau may be mortal to ascaris. Certainly two Samoans known to him to be passing ova of ascaris in Samoa did not disclose any ova when they were examined after some months' residence in the Ellice Islands.

Trichuris trichiura is extremely common in the Ellice and was frequently found in children of one year, and is only less common in Samoa.

Strongyloides was not detected. *Oxyuris vermicularis* was not discovered in the Ellice, but two cases were observed in Samoa.

In 225 cases examined in the Ellice, *Entamoeba coli* was present in 8 per cent. and *E. histolytica* in 1·3 per cent., *Endolimax nana* in 4 per cent., *Iodamoeba bütschlii* in 1·3 per cent., *Giardia intestinalis* in 3·1 per cent., *Chilomastix mesnili* in 6·2 per cent., *Trichomonas hominis* in 7·5 per cent.

In 229 cases examined in Samoa the percentages were : *E. coli* 44·1, *E. histolytica* 9·6, *E. nana* 20·9, *I. bütschlii* 3·9, *G. intestinalis* 5·7, *C. mesnili* 12·7, *T. hominis* 13·1 ; and, in addition, *Enteromonas hominis* 5·7 and *Balantidium coli* 1·7. The absence of Balantidium from the Ellice is remarkable, since pigs, in abundance and in manner of treatment alive and dead, are equally characteristic of the Ellice and Samoa.

Tuberculosis in all the islands is a ravening calamity ; peritonitis and general tuberculosis are common in young children, tubercular glands in older children, phthisis in adults. The prevalence of ankylostomiasis renders the individual susceptible—or at least vulnerable—to tubercle infection, and the customs of the people are peculiarly conducive to its spread.

Yaws is prevalent in all the islands.

A. A.

LEVADITI (C.) & NICOLAU (S.). **L'immunité dans les ectodermoses.**—*C.R. Acad. Sci.* 1921. Nov. 2. Vol. 173. p. 794.

—— & ——. **Affinité neurotrope et purification du virus de la vaccine.**—*Ibid.* 1921. Nov. 7. p. 870.

—— & ——. **La vaccine cérébrale.**—*C.R. Soc. Biol.* 1922. Jan. 14. Vol. 86. p. 77.

—— & ——. **Vaccine pure cérébrale. Virulence pour l'homme.**—*C.R. Acad. Sci.* 1922. Jan. 23. Vol. 174. p. 249.

The authors have already shown* that ectodermic viruses, such as herpes and encephalitis on the one hand, and vaccinia and rabies on the other hand, possess affinities for the three ectodermal tracts—skin'

* This *Bulletin*, Vol. 19, p. 618.

cornea, and axial nervous system. Their new experiments disclose that a refractory condition of one of these tracts, particularly the cornea, is followed by an analogous condition of the nervous axis; but the skin is not immunized, or only slightly and transiently, as a result of vaccination of the cornea; nor does the skin protect the cornea, or one cornea the other cornea, by vaccination.

Vaccinia virus after having been passed through the brain of 50 rabbits possesses the following properties: It is absolutely pure and aseptic. Inoculated into rabbits by the intracerebral route it kills, and almost always in 4–6 days. Its keratogenous and vaccinogenous properties for the rabbit are preserved. Injected into the veins of the rabbit it provokes general vaccinia. Inoculated into the skin of the monkey it produces vaccinal vesico-pustules at the end of two days, which disappear about the tenth day. This cerebral vaccine has been tried in man and has been found to give about equally good results with ordinary vaccinal virus while possessing the advantages of being aseptic and apparently keeping its properties indefinitely.

A. A.

KRAUS (R.). **O estado actual dos nossos conhecimentos sobre os virus filtraveis e invisiveis.** [The Present State of Knowledge of the Filtrable and Invisible Viruses.]—Reprinted from *Gaz. Clinica de Janeiro.* 10 pp. 1922. S. Paulo.

An excellent though brief résumé, mainly historical, showing how the progress of medical science and improved methods have reduced the list of diseases which a few years ago were ascribed to filtrable and ultra-microscopic viruses. The author also mentions the value of tissue reactions, for example, the *dermotropic* in variola and molluscum contagiosum, and the *neurotropic* in rabies and encephalitis lethargica, as aids to diagnosis, although the actual causative agents are unknown. Speaking of influenza, he is of opinion that Pfeiffer's bacillus is the prime cause and that some virus at present unknown and filtrable is responsible for some of the severe complications.

The paper is a good summary, but brings forward no new facts.

H. Harold Scott.

HARVARD UNIVERSITY. Official Register. 1922. June 15. Vol. 19. No. 33. 27 pp.—**Courses for Graduates. Announcement of the School of Tropical Medicine, Harvard Medical School, Boston, Mass. 1922–23.** Published by Harvard University, Cambridge, Mass.

The designers of this course for graduates assert, and they can do so without any fear of contradiction, that tropical medicine offers a superlative field for original work, and work of abundant application to the humane ends of the profession no less than in the prevention of disease and improvement of the public health.

Animated by a test that appeals to all the best instincts of our interesting profession, they have devised—mainly for medical graduates, but also for the sundry participation of others who are likely to profit—a magnificent concourse of studies, each contributory course of which, however, has its independent run.

The following are the individual courses of this comprehensive educational scheme:—

General Zoology as a sort of warp; Protozoology, which includes also methods of cultivating certain parasites; Helminthology;

Venomous Animals ; Tropical Plants, with reference to their poisonous and their possibly useful properties ; Medical Entomology ; Bacteriology of a very practical kind ; Pathology, macroscopic and microscopic, of Tropical Diseases ; Clinical Laboratory Methods ; Comparative Pathology of Tropical Diseases, in relation to infections of domestic animals that may be passed to man ; Infectious Diseases, with special reference to laboratory diagnosis ; Tropical Dermatology, consisting mainly of clinical demonstrations and discussions ; Preventive Medicine and Hygiene, including methods of sanitary analysis and sanitary survey ; Tropical Climatology, descriptive and comparative, and the use of meteorological apparatus ; Tropical Sunlight by the Research Fellow in Bio-physics ; a Clinical Course in Tropical Diseases ; and particular Diseases of South America.

The authors of this great course of studies have certainly upheld the principle that instruction in the principles and methods of work is the main function of a technical school.

A. A.

DELAMARE (Gabriel). **Objectifs, méthodes et enseignements de la médecine exotique.**—*Presse Méd.* 1922. Mar. 8. Vol. 30. No. 19. pp. 201–202.

The author gives expression to the view—now, indeed, fairly widely held—that, apart from a few diseases like yellow fever and sleeping sickness, " tropical " disease is more topical than tropical, being much more contingent on local conditions of life, standards of hygiene, means of communication, etc., than on esoteric tropical factors. Though it is obviously the first object of tropical pathology to study these topical or topographical diseases, the investigation of cosmopolitan diseases in a tropical environment also provides a second vast and promising field.

In the study of the topical diseases of the tropics the methods of the laboratory have naturally and for several reasons come first ; but the ultimate aim of medicine, apart from questions of epidemics, is clinical diagnosis confirmed in the laboratory.

[The great Mansonian tradition, unconsciously confirmed, could not have been better expressed.]

A. A.

FONTOYNONT. **L'école de médecine de Tananarive.**—*Presse Méd.* 1922. Sept. 6. Vol. 30. No. 71. pp. 1488–1490. With 2 text figs.

The Director of the School of Medicine, Tananarive, tells us that this school was founded by GALLIENI in 1897. It is about to be housed in more spacious quarters, with hospital attached, as is indicated in the illustrations. Entry is competitive, the number of places being determined each year. The students come almost entirely from the interior plateaux ; they engage when qualified to enter Government service and must be at least 18 ; they are all externs ; they receive a subsistence allowance of about 20 francs per mensem. Of the course, which lasts four years, the programme is given. There are also two Maternity Schools in Madagascar, where natives are trained as midwives. At present there are 150 students at the three schools, 50 of whom are maternity pupils. From its foundation to 1920 the School of Medicine has granted 336 diplomas for the practice of medicine and 208 for that of midwifery.

A. G. B.

FONTOYNONT (M.). **Caractéristiques de la pathologie malgache.**—*Bull. Soc. Path. Exot.* 1922. Mar. 8. Vol. 15. No. 3. pp. 153–158.

The diseases which most affect the public health in Madagascar are malaria and acute broncho-pulmonary affections. Less important are intestinal and venereal diseases and, in the third rank, alcoholism. Malaria, which is exclusively subtertian, is widespread. The negroes who inhabit the coast regions are much more resistant than the natives of Malay origin, who populate the mountainous interior. In the interior large sheets of water, for an undetermined reason, are much less harmful than small, and especially terraced rice-fields. That the population as a whole is either diminishing or only just holding its ground, the author seems to attribute to malaria. The broncho-pulmonary diseases are chiefly pneumococcal; tuberculosis is comparatively rare. The intestinal affections are almost exclusively diarrhoea and amoebic dysentery, which is increasing in a truly alarming manner in the interior. Diarrhoea attacks the children as soon as they are weaned and is the cause of great losses. Lastly the author draws attention to the increase of arteriosclerosis among the Malagasies; syphilis and alcoholism are becoming on the whole less prevalent, so that he is inclined to attribute this increase to the spread of malaria.

A. G. B.

MACFIE (J. W. S.). **The Prevalent Diseases of the Gold Coast.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1922. June 22. Vol. 16. No. 3. pp. 156–161.

While admitting the general improvement of the health of Europeans on the West Coast of Africa, Dr. Macfie finds that the death-rate is still three times as great as it should be and thinks that the health of native Africans has improved to a far less extent. Very little is known of the diseases of West Africa. Except in the coast towns, only a small and selected proportion of the sick are treated by doctors qualified in the European sense, the medical staff is exceedingly small having regard to the area of the country, and Africans are often reluctant to consult Europeans; [these facts are well known, but are sometimes overlooked].

With these reservations Dr. Macfie finds that the most serious diseases of the Gold Coast are venereal diseases, restricting the increase of the population, malaria, and ankylostomiasis, all preventable and readily curable. Of the devastating pestilences of the tropics, cholera and typhus are unknown, plague and yellow fever are uncommon, and trypanosomiasis is mild. Leishmaniasis and relapsing fever are unknown, undulant fever almost so, while dengue, sprue and bilharziasis occur, if at all, in a mild form. Scarlet fever, diphtheria, rheumatic fever, pellagra, infectious jaundice and trachoma are apparently unknown. Appendicitis and parasyphilis are rare. The author notes that stricture of the urethra is surprisingly uncommon considering the prevalence of gonorrhoea and the tendency of the African to excessive scar tissue formation. Gingivitis is very common, both in Europeans and natives. Pneumonia and broncho-pneumonia are frequent, especially in Africans. Bilharziasis is "not infrequently regarded by the Africans themselves as a children's disease of no importance." Skin diseases are very prevalent and of great variety. Diseases described as common, at least in some districts, are: cerebrospinal meningitis, smallpox, yaws, dysentery, especially amoebic,

phthisis (very fatal), endemic goitre, dracontiasis. Filariasis is common but is frequently unaccompanied by symptoms. He concludes that by concentrated effort much might be done to render the Gold Coast more healthy and more populous.*

[A similar paper has been published by YOUNG for Sierra Leone (see this *Bulletin*, Vol. 14, p. 232). Two diseases mentioned by YOUNG as prevalent in Sierra Leone are not named by Macfie—myocarditis, attributed chiefly to ankylostomiasis, and interstitial nephritis, probably syphilitic.]

A. G. B.

KERNÉIS. **Note sur le fonctionnement de la maternité indigène de Dakar depuis son inauguration jusqu'au 1er mars 1920.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1920. Apr. Vol. 2. No. 4. pp. 107–118.

The native lying-in hospital at Dakar containing 20 beds was inaugurated in July, 1919, with the object of lessening the infantile mortality and of furnishing instruction to the native midwife pupils. The mortality at birth in Dakar is described as passing imagination; women who have borne four or five children have lost them all at birth or soon after, and judging from the number who date their symptoms from a confinement many mothers must die. The internal management of the hospital is described. In the first month, though 25 women were admitted, only four came for their confinement. Its success may be judged from the table.

	July, 1919.	August.	September.	October.	November.	December.	January, 1920.	February.	Totals.
Normal Confinements ..	1	7	13	9	9	9	16	30	94
Twins	—	1	3	1	2	3	1	1	12
Forceps	2	3	4	1	1	3	3	1	18
Basiotripsy	1	—	—	—	—	—	—	—	1
Miscarriages	—	2	4	0	4	0	3	2	15
Disorders of Pregnancy	7	14	8	8	10	18	8	5	78
Gynaecological Affections	14	8	3	5	4	11	10	2	57
Total of Hospital Admissions ..	25	35	35	24	30	44	41	41	275

The relative set-back in October–December was due to the fear of being inoculated for plague, of which disease one entrant died after delivery. After February the hospital became crowded; to be admitted it was necessary to be in travail. The success was due not so much to the comfortable conditions as to the results obtained; it was passed from mouth to mouth that after 11 days both mother and child went out well. The author remarks the frequency of twins and of miscarriage, so far as the figures go. To the hospital is attached an out-patient clinic, where women, before and after confinement, are seen; this has been equally successful; only obstetrical and

* In a postscript to his paper (*Trans. Roy. Soc. Trop. Med. & Hyg.* Vol. 16. No. 4. p. 257) Macfie writes that he has recently diagnosed diphtheria at Accra in a native child.

gynaecological affections and babies are treated. Tetanus at 9–13 days is common ; several infants have recovered under antitetanic serum and sedative treatment. The author has not seen the disease in older children nor in mothers.

Not the least advantage of the hospital and clinic is that the midwife pupils get solid instruction which, when they are scattered through French West Africa, they will turn to account in combating puerperal sepsis and infantile mortality.

Dr. NOGUE gave an interesting account of native practices in pregnancy and child-birth. One may note that infusion of cotton seeds is considered an excellent galactogogue.

[An interesting paper, worth the attention of medical administrators. Is there a similar institution in British West Africa ?]

A. G. B.

NOGUE. **Note sur le fonctionnement de la polyclinique de l'hôpital indigène de Dakar de juillet 1919 à janvier 1920.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1920. Feb. Vol. 2. No. 2. pp. 53–57.

Here are described three cases of " kolaism," manifested by palpitation and tachycardia, anginal pain and insomnia. In two instances as many as five nuts a day were eaten, and in one the symptoms vanished when the kola nut was given up. A case of relapsing fever is the first recorded from Dakar, but it appears possible that the patient was infected at Duala, Cameroons.

A. G. B.

BOURGES (Henry). **Les marins indigènes du centre de Sidi-Abdallah.** —*Arch. Méd. et Pharm. Nav.* 1922. May–June. Vol. 112. No. 3. pp. 232–242.

Of 959 men selected for sea service, 136 were Tunisians and 823 Algerians. Rejections were chiefly for defects of vision, granular conjunctivitis and trachoma, and feebleness of constitution. Each recruit had three months' training. Between November, 1920, and June, 1921, there were 481 cases of respiratory disease, of which 454 were acute bronchitis ; of these 286 occurred in January and February. The large incidence of respiratory affections was attributed to rigour and abrupt changes of the temperature, want of endurance to cold and damp, insufficiency of warm clothing and the susceptibility of the African race. There were 24 cases of malaria, all but three believed to be relapses. A high proportion of skin disease, much of which was itch, is attributed to overcrowding. An epidemic of mumps, which affected 140 men, came to an end directly the hammocks were spaced out. At first a large proportion of men were below par, probably owing to restriction of food, the result of dearth in Algeria, and showed slight resistance to fatigue. After 3–6 months, of 90 men 77 had gained weight. Each recruit received an extra ration of 80 gm. of meat. The recommendations for such recruits in future concern, chiefly, improvements in quarters to obviate overcrowding, the supplementary ration and protection against cold. The experiment of recruiting natives of Northern Africa is considered to have been successful.

A. G. B.

PAM (M. M.). **Medical Services available for Natives on the Rand Mines.**—*Lancet.* 1922. June 10. pp. 1174–1175.

From the time that the natives are recruited for the mines to the time they go home they are under constant medical supervision. Three medical examinations—at the recruiting station, at one of two compounds in Johannesburg, and by the mine medical officer—precede their employment and each boy is weighed once a month. Here are described the system of treatment centres and the central hospital organization which tends to replace it, the nursing staff (white at the top) and the dressing stations. Clearly the mine employees are well looked after.

Tropical ulcer is common; it is stated that fungating tropical ulcers yielded to antiscorbutic diet.

A. G. B.

i. MAPLESTONE (Philip A.); ii. CUMPSTON (J. H. L.); iii. BRADLEY (Burton). **Research in Tropical Australia.** [Correspondence.]—*Med. Jl. Australia.* 1922. Apr. 29. 9th year. Vol. 1. No. 17. pp. 476–477; May 13. No. 19. p. 537; May 27. No. 21. pp. 590–591.

i. Dr. Maplestone, now Lecturer in Protozoology at the Liverpool School of Tropical Medicine and recently Acting Director of the Australian Institute of Tropical Medicine, was moved to the writing of this letter by a leading article in the *Med. Jl. of Australia*, urging the utilization of the Townsville Institute, which has been "allowed to languish without a head and without a *raison d'être*," for a larger and better study of tropical diseases. Dr. Maplestone considers that such research in Australia is foredoomed to failure because of the paucity and inaccessibility of available material, and that time and money would be wasted. "In modern research the first essential is ample material." This Australia cannot supply. Such problems as plant and stock diseases and the destruction of timber by white ants might well be investigated at the Institute; hitherto the field has been restricted to human disease. Dr. Maplestone points out that the head of the Federal Ministry of Health not only controls from Melbourne the work of the laboratory but reserves the right of censorship over all scientific papers written by the staff. There are many objections to such control, and he suggests that the Director should be directly accountable to a Minister of the Crown, and himself responsible for the appointment of the staff and the nature of the work undertaken. Maplestone, however, regards the Townsville Institute as moribund, and instead of resuscitating it would have a laboratory in the Pacific Islands privately endowed after the model of the Liverpool School. The University of Sydney would naturally undertake its control and it should not come under Government.

ii. Dr. Cumpston, Director General of Health, writes from Melbourne that the equipment and facilities of Townsville are to be used for the best advantage in furthering the development of Tropical Australia and that laboratories have been, or are to be, founded at Rabaul and Papua.

iii. The author agrees with MAPLESTONE in the main, but considers that in Townsville and its surroundings there are "boundless possibilities for research," some of which he goes on to outline, *e.g.*, filaria, plague, leprosy, dengue.

A. G. B.

Elkington (J. S. C.). **The "Mestizos" of Kisar, Dutch East Indies.** —*Med. Jl. Australia.* 1922. Jan. 14. 9th year. Vol. 1. No. 2. pp. 32–34.

From time to time reference has been made to a Dutch community which has resided for many generations in the small island of Kisar, or Kisser, situated north of Timor and separated by the breadth of England at Birmingham from Fort Darwin in Australia; this constitutes an actual experiment in the white colonization of the tropics [see this *Bulletin*, Vol. 15, p. 297]. The author, Chief Quarantine Officer of the Department of Health of the Commonwealth, had an opportunity of visiting these people and inspecting their official records; they now number some 200 at Kisar and about another 100 at Koepang, in Dutch Timor and elsewhere in the Dutch Indies. He summarizes his conclusions thus :—

"1. That nine families of originally north European or mixed north European and native blood have persisted on Kisar for over one hundred years and have bred to five and six generations. In the case of the Joostensz family, the known date of birth of the eldest Kisar-born child of European blood was 1789. His descendants down to the year 1914 numbered thirty-eight at least and possibly more. His father, J. W. Joostensz, Commandant at Kisar in 1817, was born at Macassar in 1767, giving an uninterrupted period of tropical residence for this family of 154 years on the paternal side and at least 135 years on the maternal side.

"2. That this has not been accompanied by loss of European characteristics of complexion and features, except as a result of admixture of native blood, and that even when so diluted the European physical characteristics still come out strongly in the fifth and sixth generations.

"3. That the European standard of mentality, as shown by reaction to European methods of education, persists in substantial degree after five and six generations.

"4. That these characteristics have survived in spite of environmental conditions and associations lasting for over sixty years, from 1819 onwards, and probably for some seventy years or more, which are generally supposed to be totally unsuitable for persons of European stock. These conditions have included native standards of food and food supply, endemic malaria, the psychological effect of what must have been for the earlier generations an acute sense of abandonment by their own race, life under the rule of native chiefs, constant association with a native race of low mentality, loss of European language and European religion, inter-breeding to a high degree and constant exposure to a tropical climate.

"5. That there is nothing in the available history of these people to show that a tropical climate *per se* has tended to produce degenerative effects on them or to limit fertility.

"6. That whatever evidence they may have shown of lowered physical or mental activity in the past can be fully explained by the environmental conditions of food supply, malaria and particularly of native associations, aided possibly by the accentuation of stock-weaknesses arising from inter-breeding over several generations.

"7. That the measures adopted by the Government during recent years appear to have resulted in definite improvement in their physical and mental condition, particularly amongst the children of school age."

A. G. B.

Vallet (E. M.). **Notes sur la climatologie et la pathologie de Yunnanfou (Yunnan).**—*Bull. Med. Franco-Chinois.* Pekin. 1921. Apr.–July. Vol. 1. No. 2. pp. 55–63.

Yunnan-Fou at an elevation of some 6,000 ft. lies in Yunnan, a Chinese province bordering on Burma; the town is just outside the

northern tropic. An account of its diseases was given in 1914 by VADON [see this *Bulletin*, Vol. 5, p. 376]. The climate is that of the south of France ; the temperature varies between extremes of —2·6° C. in February and 31·5° C. in June. Much rain falls in the summer. The account given is based on the admissions in 1919 to the French hospital, which has 34 beds and receives both indigent and paying patients ; 32,781 cases were treated. *Malaria*, which heads the list with 2,850 cases, has been hitherto regarded as rare and mild ; in this year it seems to have become endemic. *Syphilis* comes next with 2,289 cases. No precautions are taken against this disease and prostitution is uncontrolled. Primary and secondary lesions are often severe ; grave tertiary symptoms are unusual. *Acute rheumatism* is reported (121 cases). *Tuberculosis* gives 418 cases, 249 pulmonary ; the disease makes progress, especially among women and children.

Of *dysentery* (228 cases), 223 are claimed to be amoebic ; liver abscess is rare. *Smallpox* is rare at Yunnan-Fou, but common enough in the province. The Chinese have organized a corps of vaccinators, which operates only in the early months of the year ; the vaccine comes from Hanoi. Of *measles* there were 37 cases. *Scarlatina* has not been reported, nor *dengue*. *Plague* and *cholera* are absent. Of *diphtheria* there were 19 cases, and of *enteric* 38. *Tetanus* is often seen in newborn children (34 cases). *Filariasis* is unknown. *Beriberi* is endemic in the barracks ; at the hospital 42 dry cases were treated. *Leprosy* (56 cases) is one of the chief diseases of Yunnan. The local belief is that it is transmitted through fowls' eggs. The Chinese recognize that the disease is conveyed by contact with merchandize or food, and the lepers, who live by begging, blackmail their neighbours by threatening to contaminate their property. It is a disease of poverty. Of *goitre* 222 cases were seen ; one-fourth or one-fifth of the population of certain valleys is affected. The Chinese attribute it to the use of rock salt. *Ascariasis* is very common (1,817 cases). Of *eye diseases* 5,399 cases were seen—conjunctivitis, keratitis, entropion. The frequency of trachoma is attributed to the common towel in cinemas and restaurants.

A. G. B.

TUFFIER (Th.). **La médecine française en Extrême Orient.**—*Bull. Acad. Méd.* 1921. Dec. 27. Vol. 86. 3rd Ser. No. 43. pp. 440–446.

——. **Médecine française en Extrême Orient.**—*Presse Méd.* 1922. Jan. 28. Vol. 30. No. 8. pp. 149–152. With 1 text fig.

In the course of a felicitous speech upon the inauguration of the Pekin Union Medical College, M. Tuffier foresees among other things an incentive influence emanating from this magnificent philanthropic enterprise to other medical institutions in the Far East, including those of French origin. Of existing French institutions he alludes to the hospital of St. Michael and the hospital of St. Vincent in Pekin—the former a comfortable though not luxurious hospital for paying guests and possessing a small laboratory, the latter a poor and precarious charitable establishment. At Tientsin there is a French school of medicine, poor in equipment but rich in zeal. At Shanghai is the famous Ecole de Médicine de l'Aurore, founded and endowed by a French missionary—a modest school, but its hospital is one of the best appreciated in the Far East. In Canton four French doctors,

assisted by Chinese, administer a modest hospital and medical school. The speaker also referred to the School of Medicine at Hanoi, to the Pasteur Institute of Saigon, and to the provincial hospitals and their maternity departments in Annam.

A. A.

Baldovino (C.). **Climatologia del Brasile in relazione coll' emigrazione Europea in genere ed Italiana in ispecie.** [The Climate of Brazil with Regard to Immigration of Europeans in General and of Italians in Particular.]—*Ann. di Med. Nav. e Colon.* 1921. Sept.–Oct. Year 27. Vol. 2. No. 3–4. pp. 645–648.

The failure of Europeans to maintain as good a state of health as the native in warm climates is to be ascribed to infective and parasitic diseases, to an irrational mode of life, and not to the climate *per se.*

The author divides Brazil climatically into three zones : (1) tropical, with a mean temperature above 25° C. (77° F.) ; (2) sub-tropical, comprising Rio and Santos ; (3) mild, with a mean temperature below 20° C. (68° F.), as in Parana, Santa Catherina, part of Rio Grande and San Paolo. He further subdivides them with regard to humidity.

For more than 30 years past the annual immigration figures have exceeded 100,000, and in 1913 rose as high as 192,000. Of these the Italians constituted nearly as many as all the other races together. The diseases most common among them are malaria, ankylostomiasis and anaemia, tuberculosis and trachoma ; none of these are the result of climatic conditions as such, and the author suggests that the Board of Immigration should issue simple instructions to intending immigrants pointing out the precautionary measures that might be taken to protect themselves from such infections.

H. Harold Scott.

Risquez (F. A.). **Geografia Médica de Venezuela.**—*Gac. Méd. de Caracas.* 1921. July 15. Vol. 28. No. 13. pp. 187–208.

This long paper deals with a large variety of subjects, the first part with the country itself—its geography, climate, mineral waters, flora, fauna, distribution of population, and vital statistics ; the second with its prevailing diseases. For many of his data, in fact the majority of those in the first part, he is indebted to other medical men.

The first part is statistical and descriptive. Of the fauna the only one specifically named is the *Planorbis guadalupensis* and its association with *Schistosoma mansoni.* From the vital statistics the chief points to note are that (1) the Federal District has the highest death-rate in the Republic, 36, 32, 22 per 1,000 in the years 1918–20 respectively ; (2) the most malarious states have the lowest death-rates, varying between 7 and 16 per 1,000 ; and (3) the elevated districts of the Andes have also a high death-rate, 23 to 30 per 1,000. Caracas, he states, is becoming depopulated owing to high infantile mortality, the spread of tuberculosis, alcoholism, syphilis, and the swarms of flies.

Passing to the second part of the paper, the author deals with a large number of diseases. Of these the most important only can be mentioned here.

Malaria is responsible for a large number of deaths, over 7,000 in the year, and in one district, Carabobo, with a population of 191,793, there were 1,303 deaths from malaria only. To carry out sanitary improvements on a large scale, the author states, is beyond the

country's resources, and he hopes that the Rockefeller Institution or the Red Cross may come to their aid.

The next most fatal disease is *tuberculosis*, which accounts for nearly 5,000 deaths, and the fact is deplored that little is done beyond the opening of a few tuberculosis dispensaries.

The *dysenteries* run a close third to malaria and tuberculosis, 3,940 deaths being ascribed to these. Included in this group are both amoebic and bacillary forms, and, with the former, hepatic abscess. To remedy these he asks for a proper water supply and for the undertaking of an antifly campaign. It appears strange that the next commonest cause of death should be *tetanus*, to which 3,240 deaths are attributed. A large number of these are preventable, being cases of infantile tetanus from faulty attention at birth ; many are also put down to chiggers and their extraction. The first is clearly remediable.

Intestinal parasites, particularly ankylostomes, are a fertile cause of death, directly or indirectly. One thousand four hundred and fifty-two deaths were reported as due to *enteric fevers*, but Dr. Risquez states that he has little confidence in these figures. He had himself just seen a case of tuberculosis dying after more than six months fever which had been registered as typhoid, and, on the other hand, many of the cases in Caracas denominated malaria or " paludic fever " were in reality enteric.

Under the heading of *typhus fever* he mentions a disease which he calls Guacarapa fever ; it has a clinical picture indistinguishable from typhus, he states, but is not contagious, and in connexion therewith mentions the " Piroplasma hominis " of Wilson and Chowning, which they formerly believed to be the cause of Rocky Mountain fever. After some discussion he concludes that it is probably true typhus.

Syphilis and *venereal diseases* are very rife and are undoubtedly spreading.

Other diseases receive only cursory mention, and it may be noted that *yellow fever* has not been met with for several years.

The article shows evidence of having been carefully prepared and is an excellent résumé of the diseases most commonly encountered in Venezuela.

H. Harold Scott.

Sambon (Louis Westenra). **Tropical and Sub-Tropical Diseases.**—*Jl. Trop. Med. & Hyg.* 1922. June 15. Vol. 25. No. 12. pp. 170–185. With 12 text figs.

This very interesting paper was read at a meeting of the Royal Colonial Institute in January, 1920, and is reprinted from *United Empire*. The author's subjects are: malaria from 1000 B.C. onwards, with details of Laveran's discovery and of the work of Manson and Ross, a first-hand account of the Campagna demonstration and of the infections contracted from mosquitoes brought to London in 1900 ; yellow fever, with an account of the American (Reed) Commission of 1900 ; warbles, with a graphic account of the parts played by the female Dermatobia and the carrying mosquito (the " mosquito worm " has long been known in South America and is mentioned by Bernabi Cobo in 1653) ; the history of the introduction of the black and brown rats to Europe, as well as other topics. Dr. Sambon gives reasons

for his belief that the black rat was well known to the ancient Greeks and Romans and that the brown rat was familiar in Europe at least as early as the second century A.D. We learn amongst other things that the ancients protected the scarab, or dungchafer, because it destroyed the ankylostome.

[In regard to the Reed Commission and the statement that : It was then universally accepted that it (yellow fever) was spread by fomites, that is . . . in articles of bedding, it is worth noting that HIRSCH (1883) writes :—

" Even the most intimate kinds of contact, such as the healthy and the sick sleeping in one bed, the attendance of physicians and nurses upon the sick, the use of the uncleansed linen, clothes, or beds of yellow fever patients, post-mortem examinations of their bodies, and the like, have in no wise contributed to the spread of the disease. Particular emphasis has been laid in some quarters upon the fact that specially designed experiments to induce infection by the inunction or inoculation into the skin of the vomit of yellow-fever patients, and by the wearing of the linen and clothes used by the sick and saturated with their perspiration, have always yielded a negative result."]

Published in a popular monthly magazine the article would enthral the readers.

A. G. B.

MARZINOWSKY (E. I.). **Das Tropeninstitut zu Moskau.**—*Arch. f. Schiffs- u. Trop.-Hyg.* 1922. Vol. 26. No. 7. pp. 205–208.

The author estimates that before the war the yearly average of malaria cases in Russia was five millions, and in the last two years the number has considerably increased. " Tropical " malaria has occurred indigenously, in many instances, near Moscow. Besides malaria there are found in the Caucasus and Turkestan kala azar, oriental sore, pappataci fever, dengue, tick fever, filariasis, amoebic dysentery, and Lamblia and Trichomonas infections of the large bowel, as well as protozoal diseases of stock. The need for a tropical institute has long been recognized for study of malaria, etc., for the organization on a large scale of measures against these diseases, and for the instruction of students. In September, 1920, a Tropical Institute was opened, with the author as Director. The departments are : Protozoology, under the Director ; Chemotherapy, under Prof. SMORODINZEW ; Entomology, including study of measures to control disease-bearing insects, under Dr. NIKOLSKI ; Helminthology, under Prof. SKRJABIN ; and a small veterinary department (a larger one exists already at Moscow). The Institute has 30–40 beds, an animal house and a museum. Courses for students have commenced and the first report is in preparation.

A. G. B.

ACCRA. **Medical Research Institute. Laboratory Report for the Year 1921. Appendix A.** [MACFIE (J. W. S.) & INGRAM (A.).]—pp. 41–51.

This report consists of a general survey of work done in the laboratory. Of 1,759 routine examinations of clinical material, 1,197 were of blood. Of 627 native school children thus examined (one film), 261, or 41·6 per cent., were found infected with malaria. In 233 the

parasite was *P. falciparum*, in 13 *P. vivax*, and in 21 *P. malariae*. Crescents were found four times.

In 33 cases the Sachs-Georgi test was carried out simultaneously with the Wassermann, and in all the result was the same. Since the technique of the Sachs-Georgi test is relatively simple, it should prove useful and practicable in out-stations.

The notes are given of two cases of Dermatitis Papillaris Capillitii and one of psammoma of the dura mater associated with an exostosis of the skull.

The record of the isolation of a polymorphic trypanosome from a mule is of interest because though a guinea-pig and 21 rats were infected from it, on only one occasion in one rat were posterior nuclear forms (scanty) found. This "indicates how difficult it may sometimes be to distinguish *T. pecaudi* from *T. gambiense* in animals." It is not stated why the parasite was assigned to the species *pecaudi* rather than *brucei*.

Experiments made to determine whether the fruit of the ackee (*Blighia sapida*) is toxic on the Gold Coast showed that large doses of extracts of over-ripe or otherwise unsound fruits were apparently almost harmless to rats, dogs and monkeys; assistance was rendered by Mr. Simmons, who had assisted Dr. H. H. Scott in his researches into "vomiting sickness" in Jamaica.

During the year 107 post-mortems were made (104 in Africans). Pulmonary diseases accounted for 22·4 per cent.

Of 532 samples of mosquito larvae examined for the M.O.H. during the year 71·6 per cent. were *S. fasciata* and 22·9 *C. fatigans*, 18 other species making up the rest. The total number of species recorded at Accra is now 64. Two per cent. of the larvae were *C. tigripes* var. *fuscus*, one of our insect friends for the larva preys on other larvae or its own kind and the imago is apparently not a blood-sucker.

Of 270 rats examined during the year 105 were *Cricetomys gambianus*, the pouched rat. Its common flea is not *X. cheopis*, but *X. aequisetosus* End. The authors suggest that, like *X. astia* in India, this may prove to be a less efficient carrier than *X. cheopis*, which would account for the small tendency of plague to spread in Accra.

One may also note from this report that a motor car fitted for use as a mobile laboratory is in service, and a second was to be soon ready, as well as the sad statement that the financial state of the Colony has necessitated drastic reductions in estimates amounting in the case of the Medical Research Institute to no less than 40 per cent.

A. G. B.

Gouvernement général de l'Afrique occidentale française. Services sanitaires et médicaux. **Rapport sur le fonctionnement de l'Institut de Biologie pendant l'année 1920.** [Noc (Fernand).] —61 pp. 1922. Paris: Emile Larose, 11, Rue Victor-Cousin.

The French West African Institute of Biology at Dakar took its origin from the bacteriological laboratory of that town. It has an annual subvention of 200,000 francs and includes three sections: Human Microbiology, Animal Microbiology, and Biochemistry. Here also are prepared the serums and vaccines needed for French West Africa.

Human Microbiology.—Collections of mosquito larvae are made in Dakar daily. *C. fatigans* and *S. fasciata* abound, but no Anopheline larvae are brought in though the adults are common in the houses. *A. costalis* and *pharoensis* are frequent, hibernating in the winter and reviving in June before the first rains.

The sand-flea, *Echidnophaga gallinacea*, abounds at Dakar, on poultry, the muzzle and ears of cats, on rats, and on the legs and arms of people who go barefoot or work with their hands near the ground. It is often found on children. The larvae feed on fluid blood ejected by the adults. On a white rat swarming with these fleas an emulsion of plague bacilli was smeared and the bacilli were recovered from the dejecta of the fleas on the death of the rat a week later. The fleas may therefore serve in the spread of plague, but they do not, like *X. cheopis* and *P. irritans*, leave their dead host. The finding of another species of flea infected with fungi leads the author to suggest that these insects may be responsible for the mycoses so frequent on the legs of the Senegal natives.

Under Applied Zoology is recorded the installation at Dakar of a laboratory of marine zoology. It was found that *Naja nigricollis*, of which ten specimens were captured, must be classed with *Sepedon haemachates* as a "spitting snake"; it projects its venom more than 50 centimetres when excited.

Medical Bacteriology.—The pneumococcus was isolated from cases of arthritis and from abscesses in various situations; here as elsewhere in Tropical Africa the natives are very susceptible to this organism. The subject of antipneumonia immunization is discussed at some length, and it is suggested that a medical officer should be seconded to study the subject for two years. A propos of a change of diagnosis from malaria to cerebrospinal meningitis as a result of lumbar puncture in a case described, it is suggested that clinicians should examine the cerebrospinal fluid in all cases of fever.

Under heading Antirabic Service a table is given of 19 persons treated at the Institute; in eight the biting animal was only suspected of rabies. Rabies in dogs is not common in French West Africa, and the disease is rarely transmitted to man, possibly because the affected animals die more rapidly than in cold climates. The details are given of the first case of human rabies observed in 1920 in Senegal.

Plague.—In 1920 the plague bacillus was detected in the humours and tissues 51 times. The author thinks that the virus is kept up in rats by cannibalism, especially during periods of drought and when food is scarce; the strain of plague becomes thus mild or chronic. From the results of experiments in vaccination of baboons it was decided to substitute for two injections every six months a single larger injection every three months. This change was obligatory on the troops only; cases of plague amongst them have been extremely rare, whereas they have been numerous among the civil population. Subcutaneous inoculations do not seem to protect against lung plague. A vaccine in ground-nut oil has also been used, with what results is not stated. A large quantity of vaccine was distributed, but much remained unused. "The people fled before the vaccinator, who himself symbolized the plague. . . . There were, in fact, cases of death a few days after inoculation."

Short sections on Veterinary Microbiology and Biological Chemistry bring the report to a close.

A. G. B.

Sergent (Edmond). **Rapport sur le fonctionnement de l'Institut Pasteur d'Algérie en 1921.**—*Arch. Insts. Pasteur de l'Afrique du Nord.* 1922. Mar. Vol. 2. No. 1. pp. 121–141.

This report includes an account of the microbiological and chemical examinations undertaken during the year, the work done in rabies and malaria, a list of vaccines, serums and the like issued by the Institute, and classified lists of papers published with brief summaries of their contents.

Among the 11,764 examinations are included—sero-diagnosis for undulant fever 1,381, microscopic examination for malaria 1,598, sero-diagnosis of enteric fevers 2,957, and of typhus 1,700. There were 845 Bordet-Wassermann tests and 410 microscopic examinations for tubercle. A large number concerned diseases of domestic animals. The account of the rabies service consists of the usual statistical tables : 1,918 persons were treated, a number smaller by 636 than in the previous year ; the fact that persons who could pay were required to do so led to a stricter surveillance of domestic animals. Examples given of the antimalarial work in certain villages with neighbouring villages as controls show incontestably its value. The table of vaccines, serums and diagnostic reagents for medical and veterinary use occupies one and a half pages.

A. G. B.

Mededeelingen van den Burgerlijken Geneeskundigen Dienst in Nederlandsch-Indië. 1921. Vol. 3. pp. 192–247. [In Dutch and English.]—**Verslag over de werkzaamheden, verricht aan het Geneeskundig Laboratorium te Weltevreden gedurende het jaar 1920. Annual Report of the Geneeskundig Laboratorium (Medical Laboratory) at Weltevreden, 1920.**

From this long report, chiefly of local value, a few observations of general interest may be gleaned.

An attempt was made to infect eight monkeys with *Ancylostoma duodenale* and *A. caninum* larvae, half from man and half from dog, administered in milk. All vomited the draught. The animals remained healthy, no ankylostome eggs were found in $4\frac{1}{2}$ months' examination, and at autopsy no ankylostome worms.

A beginning was made with the systematic examination of school children for tuberculosis. To estimate the value of the procedure in the tropics each received a cutaneous injection of tuberculin, both bovine and human ; the assistance of the teachers and the consent of the parents having been secured, no difficulties were met with. The results are to be published.

A large number of samples of milk tested were adulterated, chiefly with coconut milk, " obtained by mixing the fleshy part of the coconut, well grated, with water and straining through a piece of cloth."

Samples of " Korintji rice," of ages varying between 1 and 100 years, were tested for antiberiberi vitamin. When this and freshly harvested rice respectively were pounded to produce kampong rice, though each contained a similar percentage of P_2O_5 the fresh rice administered to test birds was protective against beriberi, whereas the old rice was not. In the old rice, therefore, the P_2O_5 percentage is not a satisfactory indicator. A loss of digestibility rather than of vitamins is suggested, and further work is indicated.

Tests were made of the urine of a number of people. The percentage of nitrogen excreted was found to be very low [*cf.* Young, this *Bulletin*, Vol. 16, p. 237].

A. G. B.

KUIJER (A.). **Uit de Jaarverslagen van den Militair Geneeskundigen Dienst te Soemba 1919 en 1920.** [From the Annual Reports of the Military Medical Service at Soemba (Dutch East Indies) in 1919 and 1920.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 1. pp. 35–130. With 1 map, 3 charts and 1 text fig.

This is a rather lengthy report on the local distribution of malaria, dysentery, leprosy, tuberculosis, worm disease, tropical ulcer, a contagious disease of the throat, filariasis, yaws, and an unclassified epidemic fever. It contains little material of general interest.

Tropical ulcer was treated successfully with the powder recommended by VINCENT [this *Bulletin*, Vol. 15, p. 182].

The contagious throat disease probably is angina Ludowici; it causes at certain times a high mortality.

Syphilis practically does not occur, but yaws is widely spread and has various manifestations.

The unclassified fever was seen in an epidemic form and is described in detail. It has some likeness to dengue and the allied fevers. The accompanying rash (large maculae) appeared with the onset and lasted till one or two days after the fever had subsided. The onset was sudden, the fever ended critically. As a rule there was a marked leucopenia.

W. J. Bais.

BRUG (S. L.). **Extract uit het Jaarverslag van het Centraal Militair Geneeskundig Laboratorium over het jaar 1921.** [Extract from the Annual Report of the Central Military Medical Laboratory in 1921.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 3. pp. 332–354.

The following subjects of general interest in this report may be mentioned :—

Beriberi.—A rise in the number of cases among soldiers and sailors urges the author to warn against the use of polished rice in the army [see this *Bulletin*, Vol. 19, p. 73.]

Amoebic Dysentery.—Cane sugar enemas [see this *Bulletin*, Vol. 19, p. 32] were found clinically useful, though they did not always cause the destruction of the amoebae.

Bacillary dysentery increases in frequency at the time of the manoeuvres. The same must be expected in wartime. An experiment of vaccinating troops with "Dysbacta" is recommended.

W. J. Bais.

SITSEN (A. E.). **De aetiologie der levercirrhose.** [The Etiology of Cirrhosis of the Liver.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 1. pp. 5–9.

Of a series of 50 livers, obtained in post-mortem examinations, Sitsen found 3 to show the gross changes of cirrhosis. Of the remaining 47 he excludes 6 (2 of leprosy patients with numerous lepromas and 4 of syphilis cases with important increase of fibrous tissue, due to that disease). Of the remaining 41 livers only 16 did not show any microscopical signs of cirrhosis. In the other 25 the fibrous tissue round the branches of the portal vein was more than normal and there existed a distinct, chiefly lymphocytic, infiltration.

In Europe JAFFÉ found microscopically normal livers in people over 50 years in only 7 out of 50 cases. but Sitsen states that his series (Java) contains only few elderly persons. The gross changes of cirrhosis of the liver are far more frequent in the Dutch East Indies than in Europe. The author cites JAFFÉ, who could experimentally produce cirrhosis of the liver in rabbits by injection of blood-destroying poisons. He thinks that the most important blood-destroying poison in the tropics is the malaria virus, and once more emphasizes his opinion that malaria plays an important part in the etiology of cirrhosis of the liver in the tropics.

W. J. Bais.

i. NOGUE. **Note sur la fréquence du cancer du foie primitif chez les indigènes du Sénégal.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1920. June. Vol. 2. No. 6. pp. 155–156.
ii. ALPHAND. **Observation d'un épithélioma de la gencive supérieure.**—*Ibid.* pp. 156–157.

i. The author says that malignant tumours are rare in the natives of Senegal, and that the only form of visceral cancer he has encountered is cancer of the liver. In 18 months at the Native Hospital he has seen 2 osteosarcomas, 2 adenosarcomas, 2 cases of epulis and 7 hepatic cancers ; no instances of cancer of uterus, intestine or stomach. All the liver cancers were primary and in four cases the diagnosis was verified at autopsy. This localization is attributed to the wide prevalence of intestinal parasitism, to the presence of parasites or their eggs in the liver itself, and the great frequency of cirrhosis in natives although the great majority do not take alcoholic drinks.

ii. This case, in a Fulah woman, was of seven years' duration.

In regard to the relative prevalence of hepatic cancer and epulis, LE DANTEC refers to a possible relation between epulis and the native habit of chewing a wooden stick, as well as to the frequence of intestinal parasitism.

A. G. B.

MASSEY (A. Yale). **Cancer of the Liver in the African Native.**—*Jl. Trop. Med. & Hyg.* 1921. Aug. 15. Vol. 24. No. 16. p. 216.
——. **Further Note.**—*Ibid.* 1922. May 15. Vol. 25. No. 10. p. 127.

i. Two cases from the Kasai district of Belgian Congo ; in both the tumour was of the multiple nodular form and was considered to be of secondary origin, though no primary focus was found. They are the first cases of liver cancer met with by the author in 15 years.

One was a Batatela woman of about 30 years, who had lived the ordinary native life ; the tumour weighed 14 lb. The other was a Batatela man of about 40 years, a typical native ; the tumour weighed 10 lb.

ii. A third case from Coquilhatville, several hundred miles distant, in a male aged about 30 who, though he had worked among Europeans for some years, had kept to his native customs. He had felt discomfort in the hepatic region for about six months before admission *in extremis*. The autopsy disclosed a huge nodular liver of about 11 lb., the nodules having a soft broken-down centre giving the organ a mottled appearance. The Imperial Cancer Research Institute, from examination of a single nodule, describe it as an adenocarcinoma and probably primary.

A. A.

Appel (Fritz). **Ueber multiple Adenokarzinome der Leber bei Negern.** —*Arch. f. Schiffs- u. Trop.-Hyg.* 1921. Vol. 25. No. 10. pp. 309–314. With 2 text figs.

A search through the literature has shown the author that cancer of the stomach and uterus is a rarity among negroes, but that this is compensated by the greater frequency of other forms, such as multiple adenocarcinoma of the liver. His own material was obtained in Fernando Po, where he was interned for three years with German troops from the Cameroons. In that period about 5,000 persons were admitted, of whom 623 died. Incidentally, he says that 180 deaths were from amoebic dysentery, 115 from pneumonia, 76 from trypanosomiasis and 69 from tuberculosis. The tumours, the nature of which was verified either by operation or at the autopsy, numbered 41. Of these 30 were benign (lipomata 17, cysts 8) and 13 malignant (6 carcinoma and 7 sarcoma). The multiple adenocarcinomata of the liver were 4. He is uncertain whether this form starts in the liver cells or the bile ducts, probably the latter. He was not aware at the time that liver flukes may give rise to cancer, and they were not looked for. *Schistosoma mansoni* was found in several cases, but not in these. The cancer patients were two men and two women between 20 and 40; metastases were found in one case—in the lung. Details of the cases conclude the paper.

A. G. B.

Forsyth (W. Leonard). **Primary Carcinoma of the Liver.**—*Indian Med. Gaz.* 1922. Aug. Vol. 57. No. 8. pp. 295–296. With 1 plate.

Rogers describes cirrhosis of the liver as common among Mohammedans and the author agrees that it is relatively frequent in India. He has seen three primary carcinoma cases and describes in detail the autopsy on one of these patients. The liver weighed 106 oz. and was hobnailed. He discusses the origin of cirrhosis and attributes it to unknown toxins, organic, bacterial and protozoal.

A. G. B.

Snijders (E. P.) & Straub (M.). **Eenige gegevens over het voorkomen van Gezwellen bij de verschillende rassen in Deli.** [On the Occurrence of Tumours in Different Races in Deli (East Coast Sumatra).]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1921. Vol. 61. No. 6. pp. 625–650.

The authors, working at the Pathological Laboratory at Medan, have examined since 1914 262 tumours, partly found by themselves in post-mortem examinations, partly received from hospitals on the east coast of Sumatra. Tumours of all descriptions were found. From a calculation in which the classes of ages are taken into the account it appears that malignant growth is certainly not less frequent in Javanese and Chinese coolies than it is in Europe, contrary to the common opinion hitherto. The great frequency of primary cancer of the liver is remarkable; in 90 per cent. of the cases the livers were cirrhotic. Cancer of the stomach was not found in Javanese; cancer of the intestine is comparatively rare; cancer of the penis is not uncommon in young Javanese men, nor cancer of the portio in Javanese women. Melanotic tumours are rare. Ovarial cystadenoma

is common in Javanese women, but fibromyoma of the womb is rare. A few so-called "simple mixed tumours" (orbit, salivary glands) have been seen.

The conclusions agree beautifully with those of DANIELS (Malay States, 1903) and DEGORCE (Tonkin, 1913), and, as far as primary liver cancer is concerned, also with Japanese publications.

W. J. Bais.

SNIJDERS (E. P.) & STRAUB (M.). **Over het primair levercarcinoom in de tropen (naar Aanleiding van 57 waargenomen gevallen).** [On Primary Cancer of the Liver in the Tropics.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 3. pp. 253–289. With 1 plate.

The authors give the following summary of their interesting and exhaustive article :—

1. Primary liver cancers are about 35 times as frequent in Deli (East Coast Sumatra) as in Europe. They are common in Javanese as well as in Chinese.

2. The prevalence of this disease is due chiefly to the liver cell carcinoma. It is doubtful whether cancer of the biliary ducts is more common here than in Europe.

3. The high number of liver cell cancers is accompanied by great frequency of cirrhosis of the liver, which, however, is not so prevalent here in comparison with Europe as is carcinoma.

4. Notwithstanding the greater prevalence of liver cancer the proportion of cases with and without cirrhosis is approximately the same as in Europe, *i.e.*, nearly 90 per cent. of the cases is found in cirrhotic livers.

5. The cirrhosis nearly always shows the Laennec type, exceptionally the type of Hanot.

6. The liver cell cancer often occurs in young people. Cases in patients of 20–30 years are not rare. The cancer of the biliary ducts seems here more a disease of the aged.

7. Anatomically a unicentric origin of the liver cell cancer is very probable. The primary centre is situated about three times as often in the right as in the left lobe.

8. Benign adenoma of the liver is very rare in Deli. Only in very exceptional cases does a cancer probably originate from an adenoma.

W. J. Bais.

DE LANGEN (C. C.). **Die studie van het kankervraagstuk in de tropen.** [The Cancer Problem in the Tropics.]—*Nederl. Tijdschr. v. Geneesk.* 1921. July 2. Vol. 65. (2nd half year.) No. 1. pp. 24–27.

Bacteriology and protozoology, which are of such enormous importance in the tropics, have so absorbed the attention of research workers that the cancer problem has been badly neglected up to quite recent years. The first impetus to systematic research in this line in Dutch East India was given by Professor ROTGANS, Founder of the Cancer Institute at Amsterdam. De Langen carefully went through the clinical notes of different hospitals in Java for the years 1906–16. Amongst 422,943 Indian, Chinese and Arabian patients, he found 460 cases of malignant disease, *i.e.*, just over 1 per 1,000. Even slightly lower figures were furnished, namely 44 cases of carcinoma

out of 48,838 patients by the Central Hospital at Weltevreden, where the staff was of such a high standard of efficiency as to justify the conclusion that very few cases had been missed. In striking contrast with Europe, where it represents nearly one-third of all cases of malignant disease, carcinoma of the stomach was found only in a few of the 460 cases mentioned above, and in 50,000 consecutive patients at the Central Hospital not a single case occurred. De Langen himself, in his 16 years at the Central Hospital, three times made the clinical diagnosis of carcinoma of the stomach, but post-mortem they were found to be cases of primary sarcoma. Primary carcinoma of the liver is most frequently found (duct-carcinoma or carcinoma of the gall bladder was never found), followed by carcinoma of tne cervix, penis and tongue. Carcinoma of the breast was exceedingly rare.

T. Joekes.

Hoffmann (W. H.). **Ein Beitrag zur Krebsätiologie auf Grund der Krebsstatistik in Cuba.**—*Muench. Med. Woch.* 1922. Feb. 24. Vol. 69. No. 8. p. 271.

A statistical study has led Behla to the conclusion that the " virus of cancer " gets access to the body in raw garden vegetables. In the island of Cuba fresh garden produce does not contribute to the diet; it is therefore a good place to test Behla's conclusion. The statistics for the years 1900 to 1919 are furnished. The figures of deaths from malignant disease range from 26·5 per 100,000 in 1900 to 44·2 in 1910, since which there has been a slight rise, to 47·9 in 1919. The comparative figures from Europe are 57 in Prussia, 132 in Switzerland, and 140 in Denmark, but it is remarked that the Cuban figures are probably below the reality. It is concluded that in Cuba, as elsewhere, cancer mortality has risen, and that the figures are against the assumption of any relation between cancer and uncooked vegetables.

A. G. B.

Le Dantec (A.). **Tumeur mixte du maxillaire supérieur d'origin dentaire.**—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 485–488. With 3 text figs.

Three cases of large adamantine tumours of the jaws in natives of West Africa are here figured and discussed. Dr. Gontier contributes an account of their histology. They consist of a dense fibrous stroma honeycombed at the centre by cyst-like cavities lined with pavement epithelium and filled with a hyaline substance. From these cavities strings of cells having a sarcomatous or endothelial appearance ramify. In other parts the fibrous stroma forms a network containing large islands of carcinomatous-looking cells. In other parts again groups of nests of imbricating epithelioid cells occur. Finally there are places where the stroma is cartilaginous and the form of the cells is also modified. The tumours, in short, form an association of diverse elements and are best described as mixed tumours.

A. A.

Jame. **Epithélioma malpighien pavimenteux lobulé à marche rapide chez un indigène nomade des hauts des hauts plateaux.**—*Arch. Inst. Pasteur de l'Afrique du Nord.* 1922. Mar. Vol. 2. No. 1. pp. 114–118. With 2 text figs.

The author, who has practised for some months in the high plateau country of Algeria, finds malignant growths to be apparently of rare occurrence but epithelioma to be less unusual than other forms. The patient was a man of 65 with a large tumour of 7–8 months' duration

occupying one side of his face. The examination of two fragments led to the diagnosis of Epithelioma malpighien pavimenteux lobulé. The tumour, which was removed post-mortem, was found to have invaded periosteum and bone. Two years before the eye on the same side had been enucleated and it is suggested that the growth was secondary to a neoplasm of the epibulbar or conjunctival tissues.

A. G. B.

Hudellet (G.). **Néoplasme de l'oesophage.**—*Bull. Soc. Path. Exot.* 1922. May 10. Vol. 15. No. 5. pp. 363–364.

The patient was an emaciated native of 75 admitted to hospital at Dakar with acute bronchitis. He complained of pain behind the mid sternum which interfered with swallowing. Examination by X-rays, with the use of an opaque fluid, showed a funnel shaped collection which emptied slowly, at the level of the fourth dorsal vertebra. At autopsy a neoplasm was found, implicating the circuit of the gullet and leaving only a narrow lumen, and proved to be a lobulate pavement epithelioma.

A. G. B.

Archibald (R. G.). **A Case of Paget's Disease associated with Carcinomatous Infiltration of the Breast of a Male Native of the Sudan.**—*Amer. Jl. Trop. Med.* Baltimore. 1922. Mar. Vol. 1. No. 2. pp. 133–136. With 1 plate.

This case was one of co-existence of Paget's disease of the nipple in the male breast with carcinoma in a native aged thirty-five; which was primary is uncertain. Cancer is more prevalent in the Sudan than is supposed, the author writes, but he does not here give any details.

A. G. B.

Appel (Fritz). **Ueber die Tropenmyositis, nach eigenen klinischen und histologischen Beobachtungen aus Fernando Póo.** [Tropical Myositis; Clinical and Histological Observations from Fernando Po.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1921. Vol. 25. Nos. 6 & 7. pp. 163–182. With 9 charts & 2 text figs.; and pp. 195–211. With 2 plates & 2 text figs.

This is a long and careful essay on Tropical Myositis, based mainly on the clinical study of a large number of cases (65 are tabulated), on a few autopsies, and on a certain amount of histological investigation.

The disease is defined as an acute illness beginning, with or without any prior trauma, as a fever accompanied by symptoms of muscular rheumatism; but, without any other obvious symptoms, the patient is undoubtedly very ill, and generally has albuminuria. The fever may subside in a few days or weeks, without sequelae; but more often goes on to the formation of abscesses in the muscles—single or multiple, sometimes in successive crops. In the author's experience it does not occur in children under 12. It is a disease unknown in Europe and apparently also in America; a chart of its geographical distribution is given, showing its occurrence in those parts of tropical Africa and Polynesia which formerly belonged to Germany, and also in Tonkin and Fiji.

The author distinguishes several clinical varieties of the disease and gives short abstracts of illustrative cases:—(1) Acute non-suppurative; (2) acute suppurative; (3) acute suppurative with relapses (*i.e.*, successive crops of abscesses); (4) acute suppurative with pyaemia; (5) superacute, ending fatally before any suppuration can occur; in one of these cases all the affected muscles were observed

p.m. to be infiltrated with a dirty-brown exudate. From histological investigations the author concludes that the primary feature of this disease is the formation of granulomatous foci in the myolemma of the striped muscles. Other organs (spleen) may be involved secondarily.

In the early stages the muscular foci are infiltrated with a non-oedematous non-suppurative granulation tissue.

Giant cells or relics of filaria are never found in the foci; once only did the author find traces of a microfilaria of the perstans type.

On the other hand in the pus of the abscesses staphylococci are a regular ingredient.

As to the causation of these foci the author discusses the theories which have been advanced, namely microfilarial, sporotrichotic, and bacterial, and, inclining to the latter, discusses further the Pasteurella (haemorrhagic septicaemia) and the staphylococcus theories, of which he inclines to the latter.

Differential diagnosis and treatment are also considered at considerable length, the question of treatment being mostly a matter of surgery.

[For previous papers on this subject see this *Bulletin*, Vol. 2, pp. 92 and 422; Vol. 3, pp. 281 and 317; Vol. 4, p. 130; Vol. 10, pp. 304–305; Vol. 13, p. 368; and Vol. 17, p. 242.]

A. A.

Laigret & Lefrou. **Les pyohémies à abcès profonds (à propos de 11 cas d'abcès profonds observés en A.E.F.).**—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 459–476.

This paper contains an excellent account of the multiple deep-seated intramuscular abscesses (tropical myositis) met with in widely separated parts of the tropics, and a discussion of their aetiology, the whole being based on observations of eleven cases in French Equatorial Africa, which are recorded at some length, one of them having been a fatal case.

The clinical phenomena are discussed:—The extraordinary variability of the body temperature, which sometimes remains normal, but more usually shows a typical hectic curve with evening rise and morning remission; the sudden and rapid emaciation, which occurs even when there is no fever; the pain, diffused or localized, which is not explained by inspection; the localized induration in some muscle, revealed by palpation; the vagueness of the fluctuation which may be elicited when suppuration occurs; the extraordinary pus, almost always of a chocolate colour resembling that of liver abscess.

In nine of the authors' eleven cases suppuration occurred, and in every one of these nine they found a pure growth of staphylococcus. In two of the indurations in the fatal case they observed at the autopsy an intense infiltration of leucocytes between the muscular fibres.

Regarding the aetiology, the authors remark that they never found either Pasteurella or Filaria—always staphylococcus, with sometimes, in addition, little lumps of some fatty material. They refer to the observations of Ouzilleau, Külz, and Wise & Minett [this *Bulletin*, Vol. 2, 92–3], and they admit that a filarial origin would account for the pathology and geographical distribution of these abscesses, and also that a dead filaria might supply a good base for a secondary invasion of staphylococcus. But they themselves have never found a filaria, and appear still inclined to regard the condition as a primary pyaemia without obvious point of entry.

As to the manner in which the staphylococcus may obtain entry the authors point out that the various mucosae are permeable, and also remark that though negroes may not be susceptible to boils they frequently suffer from lesions infected with staphylococcus.

As regards nomenclature the authors object to the obviously inappropriate pyaemia (pyohémies atténuées), and think that the term "myositis purulenta tropica" employed by the Germans in Cameroon best expresses the condition.

In treatment the authors recommend opening and cleaning out as soon as possible; they themselves always practise drainage but think it may be superfluous, as the suppuration dries up very quickly when the abscess has been evacuated. They have used colloids by intravenous and intramuscular injection, without appreciable result; and have also tried antistaphylococcus vaccine without much effect, but think that this line of treatment might be developed.

A good bibliography is appended.

A. A.

GIBLIN (W. E.). **Some Clinical Notes and Comments on Myositis amongst Papuan Natives.**—*Med. Jl. Australia.* 1922. July 15. 9th year. Vol. 2. No. 3. pp. 60–62.

Myositis is "fairly common" amongst Papuans. Of 906 persons admitted to the Samarai Native Hospital in 2 years 16 had myositis, the majority suppurative myositis; all were indentured labourers. Apart from two or more cases the cause of which was evident, the etiology was uncertain. The disease is acute or subacute. The acute type starts with rigor, high temperature and severe pain in many muscles—arms, legs, back, buttocks and chest. Fluctuation may be detected in a week. As a rule, when the abscesses are opened the patient recovers. In the sub-acute type not so many muscles are affected—6, 4, 3 or only 1. Pus takes 2–3 weeks to become palpable; fever persists and the patient emaciates. Recovery is complete. When suppuration does not occur high fever may persist for 3–4 weeks, and the indurated muscle, usually of the anterior abdominal wall or the pectoralis major, becomes supple again. The author finds that the British authorities regard these abscesses as filarial and he quotes MANSON-BAHR and WISE & MINETT in support of this view. WISE and MINETT found adult filariae within the ilio-psoas four times. MANSON-BAHR found them in various situations where suppuration had taken place but never, the author notes, in an intramuscular abscess. He did, however, grow staphylococci in four instances.

The author is inclined to regard this affection as myositis of specific origin and draws attention to an article in OSLER and MCCRAE's "System of Medicine" (Vol. 5, p. 872 of the 2nd edition) on Primary Suppurative Myositis, which appears to correspond to the Papuan disease. It is defined as "a single or multiple muscle inflammation, mostly acute, of bacterial origin, presenting clinically the picture of an acute infectious disease and generally ending in suppuration." This disease was described from Japan in the last century as of bacterial origin. The Japanese regarded *Staphylococcus pyogenes aureus* as the specific cause and a similar disease was produced in animals. The author himself found staphylococci in the pus from three patients; in others the pus was not examined.

[The reviewer was unaware of this article in OSLER and MCCRAE, which is probably not well known.]

A. G. B.

Sézary (A.) & Alibert (J.). **Deux cas de syphilis nerveuse de l'Européen dus au virus africain indigène.**—*Bull. et Mém. Soc. Méd. Hôpit. de Paris.* 1922. May 25. 38th Year. 3rd Ser. No. 17. pp. 816–818.

A contribution to the unity or duality of syphilis controversy. Two Europeans who were infected with syphilis by native women in North Africa, and had suffered from mucous plaques, subsequently developed undoubted tabes. According to Levaditi and Marie a neurotropic virus can be distinguished from a dermotropic, and it is well known that in North Africa affection of the nervous system is rare. In the instances given the same virus was both neurotropic and dermotropic. Reasons are given for the belief that the virus was really indigenous and had not been derived in the first instance from Europeans.

A. G. B.

Cawston (F. G.). **Freshly Dissolved Tartar Emetic in Venereal Disease.**—*Jl. Trop. Med. & Hyg.* 1922. May 15. Vol. 25. No. 10. pp. 126–127.

The author at Durban uses intravenous injections of 0·5 to 1·5 grains of freshly dissolved tartar emetic for gonorrhoea and soft sore, in which the discharge is lessened and the sore cleans, and for syphilis with or without other drugs. He notes its good action in three cases of keratitis, one of which had received arsenical treatment without benefit.

A. G. B.

Huchard (G. L.). **Quelques considérations sur l'emploi du " Trépol " dans le traitement de la syphilis.**—*Bull. Soc. Path. Exot.* 1922. May 10. Vol. 15. No. 5. pp. 364–369.

Trépol, an oily suspension of tartrobismuthate of potassium and sodium, is regarded by the author as an energetic treponemicide with the drawbacks of provoking pain and stomatitis. He has used it by intramuscular injection in five cases at Dakar, two Moroccans and three Europeans. Two had stomatitis, all had pain, and three symptoms of poisoning. The author looks to better results in the future. Fournier and Guénot have recently published a full account of the treatment of syphilis by bismuth [*Ann. Inst. Pasteur*, 1922, Jan.], and nine other references are given.

A. G. B.

Bombay. **The League for combating Venereal Diseases. Fourth Annual Report, 1921–1922.** [Noronha (Socrates), M.O. in charge.]—22 pp. Bombay: League for combating Venereal Diseases, 66, Lamington Road, Grant Road. Printed by Silvester's P. Press.

We gather from the report that though this League is countenanced financially by the Bombay Government and the Bombay Municipality, what it considerably desires is to be allowed to work in some sort of official co-operation with the Health Department of the Municipality and the Municipal Dispensaries.

The report shows that the number of cases treated this year is nearly twice as many as in the year of inception (1918–1919), and that about 35 per cent. were sent by medical institutions of some kind. The several occupations of the patients are usefully tabulated; prostitutes

head the list, and "unoccupied persons" follow in numbers that sufficiently exemplify the hackneyed line of Dr. Watts' hymn; married women infected after marriage are deplorably numerous. Forcible comment is made on the evil done by quacks of incredible boldness and plentiful lack of responsibility.

A. A.

Heinemann (H.). **Vergleichende Blutuntersuchungen mit den Methoden von Wassermann, Sachs-Georgi und Meinicke (DM). II. Mitteilung.** [Comparative Blood Examinations by the Methods of Wassermann, etc.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1921. Vol. 25. No. 11. pp. 323–334.

In a former paper [see this *Bulletin*, Vol. 19, p. 88] the author has recorded a series of comparative tests of the methods of Wasserman, Sachs-Georgi, and Meinicke. He now continues the record of these comparative tests, dealing with the serum of 2,000 Javanese labourers of both sexes. He finds in this, as in the former series, that the conformity of precipitin reaction is good, but that the conformity between complement fixation reaction and precipitin reaction is different from the European standard—a nonconformity that seems to be due chiefly to the influence of malaria.

A. A.

Käyser (J. D.). **Mededeeling omtrent het voorkomen van venerische ziekten in het Nederlandsch Indische Leger.** [On the Frequency of Venereal Diseases in the Dutch East Indian Army.]—*Nederl. Tijdschr. v. Geneesk.* 1922. Vol. 66. Pt. 2. No. 4. pp. 401–408. With 3 charts.

Three graphs represent the percentages of venereal disease *in toto*, and of syphilis and other venereal diseases separately in the Dutch East India army from 1887–1919.

W. J. Bais.

i. Noc & Kerneis. **Un cas de rage chez un Européen au Sénégal.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1920. Nov. Vol. 2. No. 9. pp. 263–264.

ii. Curasson (G.). **Identification du virus rabique du Sénégal.**—*Ibid.* Dec. No. 10. pp. 279–280.

iii. Heckenroth (F.). **Deux cas de rage humaine signalés à Tahoua, Niger. Leur valeur dans la question de la transmission à l'homme du virus rabique de l'A.O.F.**—*Ibid.* 1921. Mar. Vol. 3. No. 13. pp. 28–30.

iv. Gautier. **La rage au Dahomey. Extrait du rapport mensuel (novembre 1921) de la colonie du Dahomey.**—*Ann. de Méd. et de Pharm. Colon.* Paris. 1922. Jan.–Feb.–Mar.–Apr. Vol. 20. No. 1. pp. 87–88.

i. The danger of rabies in West Africa is confirmed by the case of a European in Senegal who was bitten by a stray dog on the 18th July but did not go to hospital until the 30th August, although acute pains had recurred in the bite and the bitten limb on the 20th August, because he was assured that cases of rabies were unknown among Europeans in Senegal. When admitted he was suffering from spasm of the larynx and gullet, and he died 15 hours after admission in an agony of asphyxia. His dog, which had been bitten at the same time as himself exhibited no symptoms until the 15th August when it turned blind and became paralysed in one of its forelegs.

At the autopsy there was much acute oedema of the pia mater, and much fluid in the arachnoid spaces and ventricles. The temperature of the body persisted high two hours after death. Two guinea-pigs inoculated with the medulla wasted and suffered from respiratory troubles and died in 17 days; two rabbits became paralyzed on the 15th and 18th days and died on the 16th and 21st days individually.

ii. The virus was obtained from an indigenous (Senegal) dog that exhibited all the symptoms of the disease and died after an unusually prolonged paralytic phase. Half the dog's brain, emulsified, was injected into the jugular vein of a sheep, in four operations, at weekly intervals. About 40 days after the last injection half a cc. of a dilution of fixed virus was inoculated in part under the dura mater, in part into the anterior chamber of the eye of the sheep. Up to four months afterwards, when the sheep was sacrificed for another experiment, the animal never exhibited any symptoms attributable to hydrophobia. It appears, therefore, that the Senegal virus affords immunity to the fixed virus, and therefore (although the natural resistance of Senegal sheep to fixed virus is not exactly known) that the Senegal virus is of rabic origin.

In the discussion that followed, Noc observed that the existence in the Senegal dog of a disease having rabiform symptoms was well known, and that its differentiation from true rabies ought to be worked out, particularly as the Senegal virus, usually mild, could acquire increased potency under conditions still imperfectly understood.

iii. Until recently it has been held that the indigenous West African rabic or quasi-rabic virus could not be transmitted to man, and in harmony with this view it has been suggested that the undoubted cases of human rabies that have lately been observed in West Africa may be of extraneous origin. The author, while admitting the plausibility of this explanation, is hardly inclined to adopt it, on the grounds that it does not easily account for the isolated instances and the wide separation of the cases, and the occurrence of cases in the interior of the country, on the ground also that it postulates a rapid attenuation of the virus after its importation. He is rather inclined to think that the indigenous virus can be imparted to man under certain conditions, and that the rarity of human cases is due partly to the fact that the native dog is not very intimate with man, partly to the small percentage of contaminated bites among the bites that do occur, and, so far as the natives are concerned, partly to the non-recognition of human rabies as an effect of dog-bite.

iv. Record of two Senegalese children bitten by a rabid dog: one of them, bitten on the head, died of rabies three weeks afterwards; the other was sent to the antirabic institute at Dakar.

A. A.

Harvey (W. F.) & Acton (H. W.). **An Examination into the Degree of Efficacy of Anti-Rabic Treatment.**—*Indian Jl. Med. Res.* 1922. Apr. Vol. 9, No. 4. pp. 852–889. With 2 charts in text.

But for the war this important paper, the drift of which is to call attention to the imperfection of existing standards for estimating the degree of efficacy of antirabic treatment, would have been published about seven years ago.

The authors, of course, do not impugn the propositions that the real mortality-rate of rabies—once the disease has declared itself—is 100 per cent., and that animals can be immunized against rabies before infection.

After describing the several methods of treatment that have been employed at the Kasauli Institute since its inception, they open out on a detailed criticism of the indefiniteness of mortality statistics of the disease.

The death-rates at antirabic institutions are merely death-rates of persons treated. But of the persons treated the data are inadequate. It is not known for certain in every case that they have been peripherally infected or have even run any risk of such infection; for the saliva of a rabid dog (assuming the animal to be really rabid) is not *necessarily* infective; and then, among patients coming to an institute for treatment, some may not have been actually bitten, but may merely have been in contact with rabid animals or their belongings, or with hydrophobia patients, or may have been bitten through protective clothing, or may have had the bite cauterized immediately. The authors' argument, in short, is that Pasteur Institutes in general show diminution of mortality due to "treatment" without any accurate definition of the condition treated. Furthermore, in many Pasteur Institutes the greater proportion of deaths may be excluded from the failures of treatment by limitations which if not exactly arbitrary are at any rate open to criticism; as, for instance, by excluding persons who die later than 15 days after the completion of treatment, without giving information how late they arrived for treatment, and the duration of treatment.

If there is uncertainty of terms in estimating the death-rate among persons coming to institutes for treatment, there is even more uncertainty regarding the death-rate among untreated persons. In a given area how can it be known that all the rabid animals in existence have been reported, or even observed, and that all the wounds, however trifling, inflicted by rabid animals have been brought to light? The tendency in statistics of the untreated is to overload deaths and to under-estimate risk, and so to exaggerate the death-rate. As a matter of fact it seems probable that the collection of statistics of the untreated is based largely on the occurrence of deaths from hydrophobia.

The authors are of opinion that statistics of results of treatment are probably more informative in Oriental countries, where the people are more likely to be bitten in the bare flesh and less likely to fly to an institute for treatment, than in countries where the population is well clad and more anxious.

We give here only the main drift of the authors' argument, which is set forth at considerable length and with all the formality of the statistical method. The formal conclusions of the paper are, briefly, that:—

"1. The crude death-rates from rabies whether amongst treated or untreated should be corrected in accordance with the constitution of the population concerned.

"2. We should have substitution, or at least inclusion of the total mortality rate in reports, which at present simply give failure rates.

"3. The current ideas of the mortality occurring amongst the untreated are in need of revision."

A. A.

Archives des Instituts Pasteur de l'Afrique du Nord. 1922. June. Vol. 2. No. 2. pp. 259–272.—**Fonctionnement des Services de l'Institut Pasteur de Tunis pendant l'année 1921.**

Antirabic service.—The number of persons treated was 909 (780 the previous year). In the town of Tunis there were 213 cases. The writer condemns the carelessness of the inhabitants and police and

does not foresee any improvement till the persons bitten take action for damages against the dog owners and the court inflicts a heavy fine. Of 901 bites, in 529 the owners of the animals were known. Apart from six persons who succumbed in the course of treatment, there were no fatalities. Since the inception of treatment at Tunis 10,433 persons have been treated with 24 deaths, a mortality of 0·2 per cent.

The usual details are furnished of vaccines prepared and analyses or examinations made.

A. G. B.

VAN LOON (F. H.). **Eenige gevallen van zenuwlijden na 'virus fixe' behandeling.** [Some Cases of Nervous Disease after Treatment with Fixed Virus.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 3. pp. 394–411.

Van Loon describes one case of disseminated myelitis and three cases of functional nervous disturbance, in all of which the symptoms broke out during antirabic treatment. As other causes were present to account for the nervous disease in each of the patients (influenza, malaria, pre-existing nervous lability), he considers the antirabic treatment in his cases as auxiliary in the etiology. He urges, however, that proper attention be paid to possible predisposing factors to nervous diseases in patients to be treated with antirabic vaccine, and that the treatment be carried out in a hospital if it seems desirable.

W. J. Bais.

i. DURANTE (G.) & ROY (J. N.). **Le Goundou.**—*Bull. et. Mém. Soc. anat. de Paris.* 1920. Vol. 90. pp. 587–591.

ii. BOTREAU-ROUSSEL. **Le Goundou.**—*Ibid.* pp. 612–614.

iii. TOURNIER. **A propos d'un cas de goundou.**—*Ann. de Méd. et de Pharm. Colon.* Paris. 1922. Jan.–Feb.–Mar.–Apr. Vol. 20. No. 1. pp. 11–13.

i. Textbooks tell us that the goundou tumour consists of spongy bone covered with a thin layer of compact bone. According to Durante and Roy this is incorrect. They made a histological study of a specimen half a centimetre wide at the base and one centimetre in height, and so hard that it had to be decalcified. It was found to be composed of dense fibrous tissue, constituting two-thirds or three-quarters of the mass, and the remainder of thin bony lamellae. The fibrous tissue, disposed in whorls or parallel bundles, or reticular in appearance, was very vascular. The veins were normal, but the arterioles, particularly at points of bifurcation, were the seat of perivascular inflammation rarely affecting the muscular coat and doubtfully the epithelium. There were also inflammatory foci independent of the vessels. The cells were small, with round nucleus and very little protoplasm, or larger and epitheloid, representing a more sluggish reaction. Giant cells were not seen. The thin bony lamellae were irregularly scattered; they are of true bone, for they contain branched osteoblasts disposed in linear series parallel to the surface of the lamellae. There is no periosteal covering. The surface of the lamella is in direct contact with the neighbouring fibrous tissue; at certain points one can see the fibrils prolonged into the bone in the form of Sharpey's fibres. The lamellae do not appear to be directly connected with the subjacent bone, but to be separated by a thick fibrous shell (aponeurosis). The bony elements seem formed

on the spot by metaplasia of fibrous tissue. The fibrous tissue does not represent a process of cure, but one of still active chronic inflammation.

The authors' sections allow them to affirm that in goundou it is not a question of a bony tumour but of an inflammatory lesion of chronic development. They do not think the bony lamellae are of periosteal origin ; periostitis, moreover, gives more compact exostoses. The process would rather be a medullitis, a true exuberant spongy chronic osteitis. Such inflammations come from feeble sources of irritation, from parasites less toxic than the usual cocci and bacteria. They discuss the relation of goundou to yaws and suggest that ritual incisions may serve as the portal of entry for the infective germs.

ii. The skeleton of a man of 15 from the Ivory Coast was shown, exhibiting tertiary framboesial osteitis of the long bones and the face (goundou). Death took place at an operation for the removal of the paranasal tumours. The skeleton is in the Dupuytren Museum in Paris.

iii. Recent works, such as those of Botreau-Roussel and Clapier indicate that goundou is a hypertrophic osteitis and consequent on yaws [see this *Bulletin*, Vol. 10, p. 238, and above]. The author's case does not support this hypothesis. The patient was a boy of six who a year previously had a yaws eruption and six months later developed goundou. There was also osteitis of the lower jaw, the forearms, of the tibias, which were sabre-shaped, and of the bones of the tarsus, as well as pseudospina-ventosa. He had also double genu valgum, trophic troubles of the nails, Hutchinson's teeth and other dental malformations. He was treated with novarsenobenzol, ten subcutaneous injections, in all 5·1 gm. The other forms of osteitis disappeared, but the goundou was unaffected. In addition to the inefficacy of treatment, the author points out that goundou is very rare even where yaws is common, that its area of distribution is smaller than that of yaws, and that according to Durante and Roy goundou is neither an exostosis nor an osteitis, because the bony elements are independent of the nasal bone ; it is in their opinion an inflammatory new growth.

A. G. B.

Chastang. **Bubon climatique et lympho-granulomatose inguinale subaiguë.**— *Arch. Méd. et Pharm. Nav.* 1922. May–June. Vol. 112. No. 3. pp. 195–202.

The subacute inguinal lymphogranuloma described by Durand, Nicolas, and Favre (*Soc. Med. Hôp. Paris*, 1913, Jan. 31) is here compared with climatic bubo, which it closely resembles, but from which it differs (1) in generally being preceded by transient herpes-like ulcerations of the penis ; (2) in exhibiting successive foci of suppuration ; and (3) in not being preceded or initiated with bouts of fever. (Climatic bubo, again, besides being from the first a bubo apparently disjunct from any antecedent lesion, almost always occurs in little epidemics among people living under similar hygienic conditions.) The author inclines to the hypothesis that both these forms of granuloma have a mycotic origin. Both are of an intractable nature. Extirpation is not always efficacious, since it may be followed by prolonged oedema of the leg. Intensive iodine treatment has been recommended, or injections of a mixture of xylol (0·10 gm.), iodine or iodoform (1 gm.) and vaseline (90 cc.). Ravaut, thinking that he observed amoebae in the pus of the lymphogranuloma, claims to have

obtained rapid drying-up of the suppuration fistulae by intravenous injections of emetine [see this *Bulletin*, Vol. 18, p. 297]. Dufour and Ferrie, in a case of lymphogranuloma occurring in an old syphilitic and malaria patient, with albuminuria as a further complication, improved the condition of the urine with novarsenobenzol and completely cured the lymphogranuloma with intravenous injections of emetine along with tincture of iodine by the mouth—although they did not find either amoebae or bacteria in the pus.

A. A.

Nicolai (A.) & Straub (M.). **Lymphogranuloom bij een Javaan.** [Lymphogranuloma in a Javanese.]—*Geneesk. Tijdschr. v. Nederl-Indië.* 1922. Vol. 62. No. 1. pp. 10–16. With 1 chart & 1 plate.

Reports a case of this disease, which is very rare in Javanese. The morbid anatomy is described in detail. Tubercular changes could not be detected, which is exceptional in such cases, as is the fact that the disease resembled a malignant growth rather than an inflammation.

W. J. Bais

Kraus (R.) & de la Barrera (J. M.). **Estudios sobre la fiebre petequial en Sud América. Las reaciones biológicas (Tercera Comunicación).** [Studies on Typhus Fever in South America. Biological Reactions (Third Communication).]—*Rev. Inst. Bacteriolog.* 1921. Mar. Vol. 2. No. 6. 48 pp. With 15 figs. & 12 charts.

Three main points are dealt with in detail : (1) the thermo-reaction ; (2) the serum reaction (Weil-Felix) ; (3) histo-pathological changes.

The work was undertaken partly with the object of finding out whether the disease, as met with in South America, is in all, or at least in all the important, points the same as that in Europe.

The experiments were carried out on guinea-pigs, since they were found to give as useful and reliable results as monkeys and were, of course, cheaper and more easily obtained.

Many controls were first made to determine exactly the normal temperature of guinea-pigs and from observations obtained from different places it was shown that this is variable within certain limits, but not enough to vitiate the experiments.

Four hundred and sixteen animals were inoculated and of these 270 reacted—64·90 per cent. After an incubation period of seven days as a rule (occasionally 14 or more), the temperature rose to 40·5° C. and was maintained for four to ten days. It is to be noted that it is not the rise of temperature alone which is important, but the rise after the period of incubation.

It was shown also that healthy guinea-pigs could be infected by contact with the sick, and this not by way of ectoparasites but directly by the skin or mucous membrane through minute wounds.

Before studying the Weil-Felix reaction in cases of typhus fever, the test was carried out with serum from healthy subjects and from those suffering from other diseases. In none of these was a positive result obtained in dilutions higher than 1 in 20. In typhus fever cases positive results were given in dilutions of 1 in 100 and upwards in 94 per cent.

In this section of the paper reference is made to the " anamnestic reaction," that is the lighting up or reactivation of latent agglutinins.

For example, in a patient who had previously suffered from enteric fever the Widal test showed an increase of agglutinins of *B. typhosus* when he contracted typhus ; the reverse also held good.

A consideration of the third point, namely the histo-pathological changes—the perivascular infiltration of the vessels of the skin and brain—are not specific, as they are indistinguishable from those found in encephalitis lethargica, poliomyelitis, rabies, and possibly other conditions also.

From a comparison of their results with the reports of the studies of European investigators, the authors conclude that the reactions obtained in typhus fever cases in South America are the same as those in Europe.

H. Harold Scott.

i. Sergent (Edm.), Foley (H.) & Vialatte (C.). **Iconologie des *Rickettsia* signalées en 1914 chez des poux infectés de typhus exanthématique.**—*Arch. Insts. Pasteur de l'Afrique du Nord.* 1921. Sept. Vol. 1. No. 3. pp. 215–217. With 6 figs.

ii. ——, —— & ——. **Transmission de laboratoire du typhus exanthématique par le pou.**—*Ibid.* pp. 218–230. With 4 charts in text & 1 folding chart.

i. In June, 1914, these authors published a description of coccobacillary microbes found by them abundantly in the bodies of typhus-infected lice and never in control lice [see this *Bulletin*, Vol. 4, p. 490]. They had been described before by Ricketts and Wilder, and have since received the name of Rickettsia. The authors now publish their figures, with a description of the appearances seen in lice at intervals in the course of the infection.

ii. In March, 1914, the authors published a brief account of the transmission of typhus to man and monkey by means of the bites of lice collected from a patient suffering from relapsing fever and themselves infected with spirochaetes, as well as by inoculation of young lice or of nits collected from the same patient [see this *Bulletin*, Vol. 3, p. 563].

These researches were interrupted by the war and the clinical histories of the patients are only now published. Three men, X, Y, and Z, were infected by lice or nits from the relapsing fever patient, another in a natural manner from one of these men, and three monkeys from lice collected from X during convalescence. The authors were working in Sud-Oranais in a native village well known to them where no cases of typhus had occurred for years, and, though they could not attain absolute certainty that the disease transmitted was typhus [the Weil-Felix reaction had not then come into use], they were themselves satisfied that this diagnosis was correct. Frequent blood examinations negatived a diagnosis of spirochaetosis. That infection may be passed on to the louse's progeny seems to be established. The paper, though belated, is of great interest.

A. G. B.

Nicolle (Charles). **L'infection par le virus du typhus exanthématique est-elle héréditaire chez le pou ?**—*Arch. Insts. Pasteur de l'Afrique du Nord.* 1921. Dec. Vol. 1. No. 4. pp. 433–436.

From having communicated typhus fever experimentally by crushing louse-eggs, taken from the clothing of a typhus fever patient, into an abraded skin, Sergent, Foley and Vialatte recently concluded that this infection could be inherited by the louse.

Nicolle, Blanc and Conseil, however, in 1914, from two experiments where large numbers of young lice, hatched from eggs issued from parents known by the experimental evidence of the faeces to be infected, failed to infect monkeys, concluded that the infection was not heritable.

Nicolle's explanation of the apparently contradictory experiment of Sergent and his collaborators is that the louse-eggs in their passage from the parent must have become contaminated externally by contact with the parent's infected faeces; and he holds to the conclusion that the infection of typhus fever is not proved to be transmitted from one generation of lice to another.

A. A.

i. Nénon (J.) & Bonnet (A.). **De la valeur de la séro-réaction de Weil-Félix du point de vue du diagnostic et du pronostic du typhus exanthématique.**— *Arch. Insts. Pasteur de l'Afrique du Nord.* 1922. Mar. Vol. 2. No. 1. pp. 52–55.

ii. Senevet (G.). **La réaction de Weil-Félix et le pronostic du typhus exanthématique.**— *Ibid.* pp. 56–58.

i. In the epidemic of typhus which raged in Algeria in 1921, Nénon and Bonnet were struck by the constancy and high titre of the Weil-Félix reaction in abortive or mild cases, usually Arabs, and the late appearance or absence of reaction in grave cases, chiefly Europeans. The mild cases are often difficult to diagnose so that the reaction, usually obtained on the 8th–9th day, is a real help. The severe cases can generally be recognized clinically. The serum reaction seems to be a measure of the strength of the resistance to infection; when it is completely absent in a severe case death may be expected. The authors use the reaction for prognosis as well as diagnosis, and briefly recount a series of cases which support these propositions.

ii. Senevet thinks that Nénon and Bonnet are too absolute. He agrees with them in the main but gives figures from the 1919 epidemic showing that patients who succumb may give an intense reaction and, conversely, patients who recover may give none at all, so that prognosis must rest chiefly with the clinician.

A. G. B.

Shattuck (George Cheever). **Typhus Fever in Boston and a Review of the Newer Methods of Diagnosing Typhus.**— *Amer. Jl. Trop. Med.* 1922. May. Vol. 2. No. 3. pp. 225–250.

A useful article with 116 references, nearly all from Austrian or German sources. The author studied the case-books at the Boston City Hospital and reached the conclusion that in the preceding ten years 1–3 per 10,000 medical cases were typhus. The following are among his conclusions :—

"5. A Widal reaction positive in the dilutions generally used for diagnosis is commonly present in typhus fever and, therefore, it is not, *per se*, an obstacle to the diagnosis of typhus.

"6. The proteus reaction of Wilson, Weil and Felix is not an infallible, but a very valuable aid to diagnosis.

"7. The proteus reaction to be of value must be adequately controlled. Not only should controls be performed with the test, but it would seem necessary from time to time to check with known typhus serum the agglutinability of the culture used for the test.

"8. For interpretation of the results of the test, all known facts regarding it should be borne in mind and clinical evidence should be taken into consideration.

" 9. Probably the surest means of diagnosing typhus fever during life is by means of histological examination of excised bits of skin.

" 10. Pathological changes developing in the guinea-pig after inoculation with material containing the virus of typhus are believed to be constant but may be difficult to demonstrate.

" 11. Somewhat similar lesions due to other causes may perhaps lead to error. Guinea-pig inoculation may be used for diagnosis.

" 12. The point of greatest importance for diagnosis in the blood picture is the almost constant absence of leucopenia in typhus and its nearly constant presence in typhoid.

" 13. The cerebro-spinal fluid shows an increase of cells which may be slight or marked. Failure to recognize this fact may lead to erroneous interpretation of the findings. Other changes usually found in this fluid are less important."

A. G. B.

Le Bourdellès. **La pyothérapie aseptique dans le traitement du typhus exanthématique.**—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 387–390.

The author has formed a favourable impression of the treatment of typhus by injection of sterilized pus. He has tried it in 36 cases (32 natives and 4 Europeans) in a military hospital in Algiers, the patients being between 20 and 30 years of age ; 9 of these cases were very grave.

One or two injections of 2 cc. of aseptic pus were injected daily, and no other treatment was employed except for the usual current symptoms. No unfavourable reaction to the injections, either local or general, was observed. Treatment began, variously, from the 5th to the 11th day, and the patients received, variously, from 2–13 injections.

The injection was followed almost at once by some remission of temperature, and then by general relief in the course of 24 hours, and subsequent rapid recovery—except in one case which was practically moribund when the treatment was started.

Whether antibodies are set free by the disintegration of the injected leucocytes, or whether alien leucocytes cause a useful shock, are the alternative theories of action suggested.

A. A.

Delamare (Gabriel). **La réaction de Friedberger dans le typhus exanthématique, la typhoïde et la fièvre récurrente.**—*Bull. Acad. Méd.* Paris. 1921. Nov. 29. Vol. 86. (3rd Ser.) No. 39. pp. 305–306.

According to Friedberger the subcutaneous injection of a small quantity of Proteus heated for two hours at 50° or 70° constantly provokes a reaction in enteric and other fevers but not in typhus.

The author tried this test in five cases of typhus, fourteen of enteric and two of relapsing fever, and concludes that it is far from being strictly specific.

A. G. B.

i. Walravens (P.). **Note concernant la méningite à pneumocoques.** —*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. May. Vol. 1. No. 2. pp. 169–170.

ii. ——. **Etude sur le Pneumocoque.**—*Ibid.* pp. 241–244.

i. A note from the Bacteriological Laboratory at Elizabethville, Katanga. The author has recently diagnosed eight cases of pneumococcal meningitis in natives, in the course of 2–3 weeks towards

the end of the dry season. They did not live together nor work at the same place. All died. The etiology is not always easily determined. The pneumococcus in the cerebro-spinal fluid cannot always be distinguished from the meningococcus even by Gram, but by seeding blood agar with the fluid assurity is reached. Cerebrospinal meningitis is not rare in Belgian Congo and many cases are certainly meningococcal, but the author notes that at the time these cases were recognized application was being made from the interior for anti-meningococcal serum.

ii. All the native workers in the great Katanga industries are vaccinated against pneumonia. The vaccine is prepared at Elizabethville from strains of pneumococci from LISTER's laboratory with the addition of strains from natives suffering from pneumonia or pneumococcal meningitis. . The author sought to see whether the local strains corresponded or not with those of LISTER or American authors. He received from the Pasteur Institute, Paris, three samples of serum, corresponding with the American varieties I, II and III and one numbered IV, originating from a strain of pneumococcus isolated from Senegalese in France. Six strains of microbes came from LISTER's laboratory—A, B, F, G, H, K; L, P, and P_2 were isolated at Elizabethville. The table shows the agglutination results. It is seen that three strains, G, K, and P_2, are agglutinated neither by the European serums nor by the Senegalese serum; two of these strains are South African, one Katangan.

Agglutination reactions of various African strains of pneumococcus to serums supplied from Europe.

Strains of Pneumo-coccus.	Serum.	Agglu-tination.	Serum.	Agglu-tination.	Serum.	Agglu-tination.	Serum.	Agglu-tination.
A.	I. 1/25	+ +	II. 1/25	+ +	III. 1/25	+ +	IV. 1/25	+ +
	1/50	+	1/50	+	1/50	+ +	1/50	+
	1/100	+	1/100	+	1/100	+	1/100	−
B.	1. 1/25	+ +	II. 1/25	+ +	III. 1/25	+ +	IV. 1/25	+
	1/50	+	1/50	+	1/50	+	1/50	±
	1/100	+	1/100	−	1/100	−	1/100	−
F.	I. 1/25	±	II. 1/25	+ +	III. 1/25	−	IV. 1/25	−
	1/50	−	1/50	+	1/50	−	1/50	−
	1/100	−	1/100	−	1/100	−	1/100	−
G.	I. 1/25	−	II. 1/25	−	III. 1/25	−	IV. 1/25	−
	1/50	−	1/50	−	1/50	−	1/50	−
	1/100	−	1/100	−	1/100	−	1/100	−
H.	I. 1/25	+ +	II. 1/25	+ +	III. 1/25	±	IV. 1/25	−
	1/50	+	1/50	+	1/50	−	1/50	−
	1/100	−	1/100	−	1/100	−	1/100	−
K.	I. 1/25	−	II. 1/25	−	III. 1/25	−	IV. 1/25	−
	1/50	−	1/50	−	1/50		1/50	−
	1/100	−	1/100	−	1/100		1/100	−
L.	I. 1/25	+ +	II. 1/25	+ +	III. 1/25	+ +	IV. 1/25	+ +
	1/50	+	1/50	+	1/50	+	1/50	+
	1/100	−	1/100	−	1/100	−	1/100	−
P_1.	I. 1/25	+ +	II. 1/25	+	III. 1/25	+	IV. 1/25	−
	1/50	+	1/50	+	1/50	+	1/50	−
	1/100	−	1/100	−	1/100	−	1/100	−
P_2.	I. 1/25	−	II. 1/25	−	III. 1/25	−	IV. 1/25	−
	1/50	−	1/50	−	1/50	−	1/50	−
	1/100	−	1/100	−	1/100	−	1/100	−

Explanation of signs: + + agglutination strongly positive.
" " " + " positive.
" " " ± " doubtful.
" " " − " negative.

A. G. B.

Lejeune (E.). **Importance du pneumocoque dans la morbidité des troupes noires pendant la campagne d'Afrique 1915-1918. Conclusions pratiques a en déduire pour notre Congo.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. Dec. Vol. 1. No. 3. pp. 313–326.

It is an old story that the losses by disease in war exceed the losses by the enemy's fire. Among the black Belgian troops in the East African campaign the losses from pneumococcal disease alone had this preponderance, apart from dysentery, typhoid and cerebrospinal meningitis. Thus among 8,600 soldiers who took part in the 1917–1918 campaign the mortality was 6·5 per cent., of which 4·9 per cent. was due to disease and 1·85 to the pneumococcus (wounds, 1·6 per cent.). And in the Mahenge campaign, which lasted three months, the pneumococcus was responsible for 52 per cent. of the losses in soldiers, 58 per cent. in porters, and 50 per cent. in "boys." The troops were hardened by a previous campaign and largely selected, and the food was on the whole satisfactory, the only criticism being that the clothing of the porters was too light. However, in three months 15 per cent. of the force had become non-effective and of these casualties more than one-third owing to the pneumococcus. Acute broncho-pneumonia was the commonest manifestation, but there were many cases of arthritis, serous or purulent pleurisy and meningitis. Arthritis was especially common in the shoulder and the author states that though no bacteriological examination was made there was no doubt about the cause. The condition developed without much pain till the joint was full of fluid, which in the case of persons of low resistance, such as the porters, became purulent. There were 56 cases of pneumococcal meningitis, all diagnosed by the microscope, and synchronously 71 of the meningococcal form, apart from 36 that were of an undetermined nature.

The author treated the arthritis by repeated puncture, which he found to be as effective as free incision in cases in which destruction of the joint structures had not taken place. He recommends lavage with camphorated alcohol or serum. Similarly with pleurisy, repeated puncture aseptically done is best.

Of the 56 pneumococcal meningitis cases 14 certainly recovered, and of others evacuated to the rear there was no further word; probably the recoveries reached 50 per cent.

The author discusses the susceptibility of the African to the pneumococcus and thinks that its true cause has not been elucidated. He advises in general terms the use of pneumococcal vaccines, which he considers should be obligatory for troops and civil employees.

A. G. B.

Ingram (A.) & Corson (J. F.). **Notes on Certain Post-mortem Appearances of the Viscera in Pneumonic Infections of West African Natives.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1922. June 22. Vol. 16. No. 3. pp. 167–169.

The authors have been struck by the number of times at autopsies made at Accra, both during and since the 1918 pandemic of influenza, that they have found the liver to exhibit a boxwood or even a pale yellow colour, either with, or less commonly without, a pneumonic state of the lungs. The kidneys are generally swollen, the cortex pale; occasionally the tissues are jaundiced, and there are petechial haemorrhages beneath the serous membranes of the viscera and

the mucosae of the stomach and intestines. The heart muscle is frequently flabby and the ventricles dilated. Sections of the liver stained with Sudan III and haemalum show much fat in the parenchymatous cells, especially in the central zone of the lobule; the cells themselves appear swollen and of indefinite outline; the nuclei may exhibit degenerative changes and stain badly. Section of the kidney shows cloudy swelling and granular degeneration of the cells lining the tubules, many of which contain small fat globules and are desquamating; petechial haemorrhages may be found. Their experience in fact tallies with that of JOUIN [this *Bulletin*, Vol. 12, p. 130] and they think that these cases are probably sequelae of influenza. Some of the changes closely resemble those of yellow fever and death in such a case, in which jaundice was present but no clinical history obtainable, might be attributed erroneously to yellow fever.

A. G. B.

BREFFEIL. **Note sur une épidémie de charbon humain en Guinée Française.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1919. Dec. Vol. 1. No. 5. pp. 3–5.

An epidemic is briefly described, believed to be human anthrax, beginning with a boil or small abscess in the axilla or elsewhere, followed by fever with delirium, profuse sometimes sanguinolent diarrhoea and usually bloody vomit. All had partaken of the flesh of cattle which had died or were about to die of disease. Some cases, characterized by suppuration without internal symptoms, recovered.

A. G. B.

PEACOCK (W. L.) & DUKE (H. Lyndhurst). **A Case of Human Anthrax in Buganda Kingdom.**—*Lancet.* 1921. Aug. 13. pp. 332–333.

A case of anthrax in the Uganda Protectorate was recorded by SPEARMAN, 1917 [see this *Bulletin*, Vol. 10, p. 236], but objection was raised to the diagnosis owing to the absence of cultural confirmation.

In the present instance there is a full bacteriological report, with the results of inoculation of rats and a rabbit. The patient, a native, had a pustule on the jaw with great oedema but little pain. The case was promptly diagnosed and the lesion excised.

A. G. B.

DELAMARE (G.) & NOURY (Osman). **Sur un cas de farcin humain.**—*Bull. Acad. Méd.* 1922. Apr. 4. 3rd Ser. Vol. 87. No. 14. pp. 381–383.

The patient, a man of 35, a horse breeder, with a history of addiction to alcohol and of malaria, had an eight months' history of fever, later lancinating pain in one shoulder, and a nodule on the leg which suppurated after ten days. The pus infected a guinea-pig, from which the glanders bacillus was recovered. Later the patient had a large area of ulceration and a second nodule. The three phases—febrile, arthralgic and nodular—led to the successive diagnoses of malaria, rheumatism and gumma (syphilitic or mycotic), but none of these hypotheses withstood careful examination. Glanders is common in horses at Constantinople.

A. G. B.

VAN DEN BRANDEN & VAN HOOF. **La méningite cérébrospinale au Stanley-Pool.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1922. Vol. 2. No. 1. pp. 21–35. With 5 charts in text.

An account is given of an outbreak of 14 cases of cerebrospinal meningitis at Stanley Pool in June–July, 1921, at the onset of the dry season. No case had been diagnosed bacteriologically in this region prior to 1917. Of the 14, 10 were infected with meningococci, the remainder with pneumococci. Owing to the overcrowding of natives in this locality and the lack of hygiene, vigorous measures were adopted. All the natives of Leopoldville and a large part of the population of Kinshasa were submitted to methodical disinfection of the upper air-ways by Coulomb's method.* A polyvalent anti-meningococcus vaccine was administered to native soldiers, workmen in the naval yards, and natives most exposed to infection ; 1,500 were thus treated.

The patients were strictly isolated and all their belongings were disinfected. All persons suspected from their symptoms to be carriers were isolated as far as possible ; an early case was thus recognized. The movements of natives were reduced to the minimum. A quarantine of five days was imposed at the river ports and persons concerned were submitted to Coulomb's method of disinfection. These measures were so successful that after three weeks there were no fresh cases. Notes of the 14 cases are given with five temperature charts. For the future the authors propose to vaccinate at the end of each warm season the natives most exposed to infection, workmen in crowded quarters, immigrants from neighbouring colonies where the disease exists, school children and troops, and they recommend measures to improve the conditions of existence of the natives in the crowded industrial centres at Stanley Pool.

A. G. B.

FRANCIS (Edward). **Cultivation of** *Bacterium tularense* **on Three Additional Mediums New to this Organism.**—*Public Health Rep.* 1922. Apr. 28. Vol. 37. No. 17. pp. 987–989.

"The writer now reports the cultivation of *Bacterium tularense* on (1) beef-infusion agar containing 0·02 per cent of an amino-acid (cystine) ; (2) beef-infusion agar plus a piece of fresh sterile rabbit spleen, and (3) Loeffler's blood-serum coagulated at 70° C."

A. A.

LEGER (Marcel) & BAURY (A.). **Pseudo-méningococcus pyogène isolé d'un abcès de la fosse iliaque.**—*Bull. Soc. Path. Exot.* 1922. July 12. Vol. 15. No. 7. pp. 652–654.

The patient, a European, was admitted to hospital with moderate fever and an abscess in the iliac fossa, which was opened three weeks later. The pus evacuated suggested tuberculosis but no tubercle bacilli were found, and the inoculation of a guinea-pig was negative.

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* Daily painting of throat for five days with Iodine and Pot. Iod., of each 10 parts, glycerine 100 parts ; at the same time inhalations of :—

Thymol	.. ..	4 gm.
Guaiacol	.. ..	4 ,,
Creosote	.. ..	10 ,,
Alcohol	.. ..	200 ,,

The organism isolated was a Gram-negative diplococcus, easily cultivated on the usual media and readily distinguished from the gonococcus and meningococcus. Its cultural reactions and in particular its power to ferment sugars separate it clearly from other described organisms. It would come close to *Diplococcus crassus* if this did not stain by Gram. Its cultural characters are set out at length.

A. G. B.

Carini (A.). **Abcès de la région ombilicale dû à la pénétration à travers l'ombilic des semences de capim** (*Melinis minutiflora*). —*Bull. Soc. Path. Exot.* 1922. Apr. 12. Vol. 15. No. 4. pp. 215–219. With 3 text figs.

——. **Abcesso da região umbelical devido á penetração atravez do umbigo de semente de capim.**—*Bol. Soc. Med. e Cirurg. de S. Paulo.* Brazil. 1922. Mar. & Apr. Vol. 5. 2nd Ser. Nos. 1 & 2. p. 63.

The patient, a carter with a firm at Sao Paulo trading in the seeds of fodder plants and especially "capim," presented himself with a small abscess just above the navel. Pus was let out and several bodies spermatozoa shaped, the head 1½ mm. long and the tail about 1 cm. The author was informed that such abscesses are not uncommon in workers with "capim" seeds and recognized that the bodies evacuated were indeed the seeds of the grass, *Melinis minutiflora*, found in pastures in Brazil. The workmen protect the navel with a pledget of wool secured by a belt or bandage. The seeds, which are figured, are provided with spines pointing towards the tail so that penetration of the skin is easy and retreat impossible. Moreover they are hygroscopic and as they take up moisture are endowed with movement which assists the penetration. It is stated that the workers with "capim" sometimes get conjunctivitis from the dust, and new hands suffer from fever.

A. G. B.

i. Kernéis (J.). **Observation clinique du malade qui a présenté l'infection à** *Pasteurella*.—*Bull. Soc. Path. Exot.* 1922. June 14. Vol. 15. No. 6. pp. 495–497.

ii. Leger & Baury (A.). **Septicémie, avec localisation hépatique suppurée, due à un germe à l'aspect morphologique de** *Pasteurella*. —*Ibid.* pp. 491–495.

i. The patient in this enigmatical case was a soldier, and was admitted to hospital in Dakar with a history of copious vomiting of blood. Examination on admission showed nothing but an enlarged spleen and liver, the liver not being painful. During the next two days the condition was fair, the temperature being "moderate."

Suddenly on the 4th day the temperature shot to 40° C.

5th day: copious vomiting of red blood; profound prostration; nothing in urine or faeces; no pain in stomach or liver; lungs normal.

6th day: temperature falls to normal.

7th day: shivers; temperature goes to 40·8° C.; copious vomiting of grumous-bilious fluid with floccules of black clot; haemoglobinuria and melaena; icteric conjunctivae. No malaria parasites. No spirilla.

8th to 12th day: condition improves slightly, but temperature remains up.

13th day: shivers; temperature goes to 40·6° C.; critical sweats follow.

15th to 18th day: injections of "914" are followed by profuse sweats.

22nd day: considerable improvement; temperature though oscillating does not get far from normal; sleep good; appetite returns.

30th day: final injection of "914" is followed by complete defervescence; patient now extremely emaciated, but the pulse is good; spleen still enlarged and liver enormous; there is a little ascites; there is also some dullness at the right base, but no fluid follows an exploratory puncture.

35th day: shivers; temperature rises again to 48·8°; profuse sweats; death.

The only remarkable features of the post-mortem investigation are a diffluent spleen weighing 1·03 kgm., and for a liver an enormous "sponge of pus" weighing 3 kgm. and containing abscesses ranging in size from a pin-head to an orange.

ii. Blood-smears sent early from the above case disclosed nothing but a count of 80 per cent. polymorphonuclears and total absence of eosinophiles. A culture of the same blood in ordinary bouillon revealed a bacillus resembling Yersin's bacillus.

Pus from the liver sent after death contained a multitude of the same bacillus, which by appropriate investigation was shown to be *not* Yersin's bacillus.

The bacillus was cultivated in various standard media, without, however, revealing anything of its identity beyond that it would be classed by appearances with Pasteurella if it had not very different culture characters.

A mouse inoculated from a culture, by scarification, died in 74 hours, and the bacillus was found in its organs.

A brown rat, a white rat, and a guinea-pig were subcutaneously inoculated from a culture. An enormous tumefaction occurred in every case, which gradually disappeared in the course of three weeks. On the 30th day the brown rat (decumanus) died and the bacillus was found in its heart-blood and spleen. The other two animals were alive after 66 days.

A guinea-pig inoculated into the peritoneum from a culture died very quickly from peritonitis. Other guinea-pigs were severally killed at successive terms after inoculation, and the bacillus was always found in the heart-blood and organs.

"Le germe n'est pas le coccobacille de la Peste. On ne peut non plus le rattacher a aucune des *Pasteurellae* comme pathogènes pour l'homme."

A. A.

VAN DEN BRANDEN (F.) & VAN HOOF (L.). **Ulcérations de la gorge dues à l'association fuso-spirochétique de Vincent. Observations faites au Congo Belge.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. May. Vol. 1. No. 2. pp. 175–177.

In one of two cases which is described there was generalized swelling of the throat, soft palate, tonsils and base of tongue; false membrane was present and the tonsils were widely ulcerated. The condition was serious but yielded to injections of neosalvarsan. The diagnosis and treatment are discussed.

A. G. B.

PELTIER. **L'épidémie d'influenza qui a sévi en Nouvelle-Calédonie en 1921.**—*Bull. Office Internat. d'Hyg. Publique.* 1922. June. Vol. 14. No. 6. pp. 676–685. With 2 text figs.

New Caledonia appears to have escaped the influenza pandemic of 1918–19. In 1921 Noumea was infected probably by a ship from

Sydney and the explosion of the epidemic was due to the fêtes of a week later. The course of infection followed the two main routes from Noumea. The measures taken prevented a wide spread, and the north half of the island, which communicates with the south by sea only, remained free. The Loyalty Islands were contaminated by a ship's captain who made the voyage to New Caledonia against instructions. Of the epidemic, which was mild, a general account is given. In the neighbourhood of the capital 95 per cent. of natives and 50 per cent. of Europeans were attacked.

A G. B.

Acton (Hugh W.). **An Investigation into the Causation of Lathyrism in Man.**—*Indian Med. Gaz.* 1922. July. Vol. 57. No. 7. pp. 241–247. With 3 plates.

Three species of lathyrus are considered to cause epidemic and endemic poisoning in man: *L. sativus*, *L. cicera*, and *L. clymenum*. In India the offending vetch is *L. sativus*, or kesari dâl, of which there are two varieties. It is eaten raw as flour or variously cooked, in times of plenty with wheat or rice, in times of dearth alone.

Lathyrism, a type of spastic paraplegia, is common in some parts of Central India and the United Provinces, as in North Rewah where the author's researches were made; he gives a rough estimate of 60,000 cases for that region alone. Two hundred and four patients, mostly stone-breakers, were examined (181 men and 23 women). According to the sufferers the onset in 170 cases was between the 15th and 30th year. All were of the lowest class, receiving a wage of two annas a day and during famine years being paid in kesari dâl. If they get lathyrism and cannot work on the land they have no livelihood but begging or stone-breaking. The author tried to discover an association between the year of onset and years of famine, but this, though probable, is not evident in the figures. Of the 204 cases, in 122 the disease came on in July, during the rains, and in none between December and March; the reason appears to be that the local crops are exhausted by March or April and kesari dâl is then imported; by October or November the local, small-grained, kesari dâl is gathered and this appears not to be poisonous. The high incidence in July is probably associated with the production of poisonous amines during germination. The great pre-disposing cause is the system of bondage known as the harwar system, which is described. The bondmen are taken on in May and usually receive their pay in food.

The onset is sudden, often while the men are at work. The gait is described in some detail with figures representing four stages, from the first in which the sufferer can walk without a stick, to the fourth in which he cannot rise from the ground. There is no paralysis, but a spastic condition affects the following muscle groups: the quadriceps extensor, adductors, gastrocnemii and posterior peroneals; the trunk amd upper limbs are unaffected. In the early stage the hesitating springing character of the gait—the patient walks on tiptoe—is characteristic. The body is thrown forward with each step. Later the knees are drawn one in front of the other (scissors progression); later again the knees are strongly flexed on the thighs, so that crawling is the only means of locomotion.

The bladder and rectum are unaffected; there is no ataxia. Ankle clonus and knee-jerk are increased, and on tapping the adductor muscles of the thigh a contraction occurs (adductor reflex).

As autopsies cannot be obtained the site and nature of the lesion have to be surmised from the symptoms. Thus the author reaches the conclusion that the lesion is below the second lumbar root, that both the cortico-spinal and strio-spinal systems are affected, but that whereas the lesion of the former is always partial the strio-spinal motor system may be completely destroyed.

The sudden onset suggests embolism, haemorrhage or thrombosis. The author thinks that the lesion is probably due to thrombosis cutting off the blood supply of the antero and antero-lateral tracts, which are relatively avascular, and causing degenerative changes which only partially affect the crossed pyramidal tract and partially or wholly the strio-spinal system, and as cause of the thrombosis he suggests arterial spasm.

He gives grounds for believing that the disease is not due to other vegetable products eaten by the natives, nor to adulterants of the kesari dâl. Moreover both STOCKMAN and he have produced the disease in animals fed on the vetch. He fed nine ducks on kesari dâl. Three which took the grain soaked for 24 hours in water became paralysed on the 18th, 20th and 22nd day; three fed on the grain washed in three changes of water showed no symptoms [duration of experiment not stated], nor did the third group which received in addition chopped vegetables, up to the 60th day. The poison is therefore water soluble. The author believes it to be an amine; it gives all or most of the alkaloidal tests as amines do, the amount of amines in the seed is increased during germination, which would explain the high incidence in July, many amines cause a decided contraction of involuntary muscle and blood vessels. The paralysis is permanent though some improvement may occur.

Preventive measures would consist (1) in the abolition of the harwar system; (2) in famine relief in bad monsoon years, and in control of the price of wheat and rice; (3) in increase in the knowledge of the disease, *e.g.*, removal of the poison by soaking, comparative safety of the small-grained variety, storage of grain in a dry place to prevent germination; (4) in improvements in agricultural methods. Lastly, if the State were opened up to concession hunters and the mineral wealth exploited, the peasants would not be wholly dependent for their livelihood on agriculture.*

A. G. B.

DE CASTRO (A. Bayley). **An Epidemic of Anasarca in the North Andamans.**—*Indian Med. Gaz.* 1922. Apr. Vol. 57. No. 4. pp. 132–135.

The epidemic of anasarca broke out in March with gastro-intestinal disturbance, followed in many cases by syncope and death, among free Ranchi coolies working for the Forest Department. It was studied by Dr. W. HUSSEY, whose report is quoted; 51 cases were reported with 8 deaths. In the camp concerned, malaria, dysentery, diarrhoea and fever (probably pappataci) were prevalent; spongy and bleeding gums were common. The symptoms were: swelling of feet,

* In a paper published two months later on epidemic dropsy (*Ind. Med. Gaz.*, Sept.), Major Acton says that the large-grained kesari germinates in 24 hours, whereas the small did not after four days' soaking. During germination more than twice the amount of amine was formed in the large-grained variety, which explains its greater toxicity. The amine caused paralysis in mice.

palpitation, dyspnoea, hemeralopia, digestive disturbances; no paralysis or disturbance of skin sensation. Cardiac dyspnoea was followed in two hours by death; pain in the loins was also a fatal symptom. Post mortem there was effusion in the serous cavities and the heart was in diastole. All the patients had been in the camp for 5–6 months; "their only food for about three months had been Rangoon rice, arhar dâl [pigeon pea], salt and a small portion of fresh vegetables once in 20 days": some probably had rice only, supplemented by jungle leaves and roots. The author had 14 cases under his own care, evidently less severe for none died. The symptoms are tabulated. He attributes the gum condition to the lack of mouth hygiene, and expresses the opinion that the disease was neither beriberi, nor scurvy, nor epidemic dropsy.

A. G. B.

Hutchison (H. S.), with a Foreword by Murphy (S. J.). **Rickets in India.**—*Glasgow Med. Jl.* 1922. Mar. Vol. 97. New Ser. Vol. 15. No. 3. pp. 145–158. With 2 figs. & 1 folding plan.

This is a study of rickets in Nasik, and it confirms the view held by Findlay, who, from his extensive experience in Glasgow, considers lack of fresh air and exercise as the main factor in the causation of this disease.

The author describes the population of Nasik [as indeed of India generally] as roughly divisible into two classes, namely a richer and better class, consisting of high caste Hindus and prosperous Mohammedans, who live well, and keep their women purdah; and a poorer class of Hindus and Mohammedans, whose diet consists chiefly of cereals and pulse, and whose women are not secluded (though the Mohammedans seclude them as much as they can); and he shows how much more prevalent rickets is among the former class, notwithstanding their good diet, rich in fat and milk, than it is among the latter class (particularly the poor Hindus, who do not practice purdah at all), whose diet is so poor and so deficient in fats.

The conditions of purdah life in Nasik are vividly described. The houses are in the congested area, there are no windows in the walls, inside is semi-darkness and stagnant air. In the fulfilment of maternity the woman may be mewed behind curtains in a dark corner for six weeks to three months. As there are no nurses the infant may not get its first breath of pure air in the open sunlight until it is six months, or perhaps a year old; and after its first formal introduction to the outer world it is not likely to go abroad again until it can look after itself in some fashion. Such are the conditions in the prosperous and well-fed classes.

The poorer classes, on the other hand, live for the most part in the outskirts, in huts that are far from airtight, and the women go out to work carrying their infants with them [as they do all over India], though with even the poor Mohammedans "purdah" is kept in view as a religious ideal.

In Nasik, among 380 children of well-to-do Hindus, the author found 146 cases of rickets; among 219 children of Mohammedans of all classes 62 cases; but among 650 Hindus of the poorer class 36 cases.

The incidence of rickets in the different classes of the community is shown in a series of tables, from which we may select the final summarized one [which includes also villages and towns in the Nasik

district where " purdah " is not in vogue], as it is most intelligible to those who are not familiar with Indian religions and social distinctions :—

Class.	Children seen.	Cases of Rickets.	Percentage of frequency.
Children of Purdah Mothers ..	1,073	268	24·9
Children of Non-purdah Mothers	2,305	113	4·9

Another interesting point dealt with by the author is the occurrence of tetany in adults. All the cases seen by him in Nasik were women of the well-to-do class. In one particularly well-off family he found the mother (aged 33) and a daughter (aged 14) with late rickets and tetany, and the three younger children all with severe early rickets.

A. A.

Mackie (F. P.). **Visceral Infections due to the Higher Fungi.**—*Indian Jl. Med. Res.* 1922. Apr. Vol. 9. No. 4. pp. 781–786. With 5 plates.

Here are described a case of pulmonary aspergillosis complicating kala azar and two cases of streptothrix infection of the brain, all occurring in Mesopotamia. The first case was among those described by Sprawson and by Mackie in previous papers [see this *Bulletin*, Vol. 13, p. 346] as disseminated nocardiasis.

The patient had rigors uninfluenced by quinine, spleen four fingers' breadth below the costal margin and tender, signs of consolidation at the base of the right lung, emaciation becoming extreme, subcutaneous haemorrhages, transient patchy oedemas and a subcutaneous abscess. The illness lasted nearly six months. Tentative diagnoses were: enteric fever, tuberculosis of lungs, sub-diaphragmatic abscess, malaria, kala azar. A spleen puncture was negative and could not be repeated. In an attempt at blood culture for enterica streptothrix colonies appeared; the fungus was not pathogenic to animals and subsequently occurred as a contamination in plates exposed in the laboratory. At autopsy the lower lobe of the right lung was honeycombed with small abscess cavities, in films from which a fungus of aspergillus type was seen. The fungus was cultivated, and in a pigeon and a rabbit a local infection was produced. Sections from the lung are figured; the lung tissue was extensively invaded. In films from the friable spleen Leishmania were present in large numbers. The author thinks that the aspergillus infection may have dated back to the beginning of the clinical symptoms.

In the two other cases there was irregular or intermittent fever, headache, pain referred to the eyes and eventually coma or hyperpyrexia. In each instance there were small cerebral abscesses containing streptothrix mycelium, which was also ramifying in the abscess wall and inflamed cerebral tissue.

The fungus is well shown in the coloured plates.

A. G. B.

Gonzales (Eudoro). **Algunas observaciones sobre hongos parásitos encontrados en Venezuela.** [Observations on Parasitic Fungi met with in Venezuela.]—26 pp. With 2 plates. 1922. Caracas; Tipografia Americana.

This paper gives a brief account of the various fungi parasitic in man met with in Venezuela, and a more detailed description of the

Monilias and their morphological and cultural characters and pathogenic effects in laboratory animals, but does not bring forward anything original.

An account of a woman, 28 years of age, is given, who exhibited most of the signs and symptoms of tuberculosis of the lungs. The bacillus, however, was not discovered, but *Monilia tropicalis* was cultivated from the sputum. The symptoms all cleared up when large doses of iodide were taken.

M. intestinalis, cultivated in glucose broth, and inoculated (in a dose of 1 cc.) into the base of the tongue of a rabbit, did not produce any pathological results.

H. Harold Scott.

VAN DRIEL (B. M.). **Rhino-pharyngitis mutilans.**—*Nederl. Tijdschr. v. Geneesk.* 1922. Vol. 66. 1 half-year. No. 16. pp. 1604–1610.

A woman presenting a typical picture of gangosa (healed with extensive scars of the face) was sent to the leper colony, Lao Simomo (Sumatra). Van Driel could not find any signs of leprosy, and after excluding lupus, kala azar and syphilis, made the diagnosis framboesia. The woman stated that she had suffered from yaws 12 years ago. The literature on gangosa is discussed and the author comes to the conclusion that the majority of gangosa cases are caused by yaws.

W. J. Bais.

NOGUE. **Un cas d'éléphantiasis du scrotum et de la verge avec gynécomastie consécutive.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1920. May. Vol. 2. No. 5. pp. 131–132.

A case of elephantiasis of the penis and scrotum in a native of 20 with a history of some 12 years' duration. The breasts were developed like those of a woman of the same age. Death took place from oedema of the lungs. There were three fistulous openings on the scrotum, from which urine escaped. The bladder was hypertrophied, the right kidney sclerosed, the testicles atrophied. The disease process had nipped the urethra in several places, and had thus caused cystitis, with subsequent infection of the kidney. To the testicular atrophy, the result at puberty of the constricting fibrous tissue, is attributed the secondary feminine character.

A. G. B.

KENNAN (R. H.). **Multiple Aneurysms in a Child.**—*Ann. Trop. Med. & Parasit.* 1921. Sept. 30. Vol. 15. No. 3. pp. 245–247.

MACFIE and INGRAM have described three cases of cardiac aneurysm in native boys of the Gold Coast in the causation of which malaria was suspected [see this *Bulletin*, Vol. 17, p. 422]. The present patient was a boy of four years, the son of American missionaries on leave from Sierra Leone. He had had about six attacks of fever in Freetown. Examination revealed nothing but some anaemia and four aneurysmal dilations, one at the site of the left hypothenar eminence, another just above, and two on the right side of the neck. These made their appearance in the course of six months or more and were undoubtedly arterial aneurysms. Blood examination showed *P. falciparum* and eosinophilia (12 per cent.). Several careful examinations of the faeces revealed nothing. Septic emboli, syphilis, and injury are considered as possible causes and set aside.

A. G. B.

GÄRTNER (Wolf). **Ueber die Häufigkeit der progressiven Paralyse bei kultivierten und unkultivierten Völkern. Eine statistische, biologische und Immunitätsuntersuchung ueber die Syphilis.** [The Frequency of General Paralysis in Civilized and Uncivilized Communities. A Research on Syphilis from a Statistical, Biological and Immunological Aspect.]—*Zeitschr. f. Hyg. u. Infektionskr.* 1921. Vol. 92. No. 3. pp. 341–474. With 35 tables and 4 text figs.

As would be expected from the title, this paper is largely statistical, and is disappointing in that so many of these statistics apply to Germany or other European nations.

For many years the fact has been noted that general paralysis is rare among lowly civilized and native races, but no satisfactory explanation has been advanced. If the degree of civilization is the important factor, we ought to find the transitional stages on examining races or communities of increasing grades of civilization.

Syphilis among the less civilized races runs a more severe course, but tends in greater degree to affect the cutaneous structures than it does in the civilized, amongst whom the internal organs and nervous system are prone to attack. It has been noticed that patients with marked skin manifestations do not often develop nerve-syphilis, especially general paralysis, and, vice versa, the histories of general paralytics go to show that their attacks have been accompanied by little, if any, obvious (skin) symptoms of the earlier stages of syphilis. "Allergie" and immunity bodies are produced to a greater extent when the skin involvement is marked. The effect of early treatment is to avert, or clear up, if present, the skin symptoms, and thus leads to enhancement of the natural "allergic weakness," a predisposition to general paralysis, by suppression of natural antibody formation. This early treatment, including prophylactic, is frequent among the civilized, rare or wanting among the uncivilized. It is to be noted in this respect that it is not neglect of all treatment, but a course of partial adequacy only, *i.e.*, treatment intermediate between such as is sufficient to bring about a cure and one which is totally ineffectual, in other words, a course which has a certain effect on symptoms only, leaving the disease itself still active.

Another important factor on which stress is laid is the influence of febrile conditions. Fever and suppurative states have been noticed to exercise a favourable effect on the course of general paralysis. In fact, attempts have been made to bring about improvement by artificial production of fever, as by injection of tuberculin, by the use of vaccines, and even by the transference of malaria and relapsing fever. The fact that febrile conditions are common in the tropics accounts, in the author's opinion, in part at least, for the rarity of general paralysis in tropical races.

The questions of alcohol and of a special "neurotropic" virus are also mentioned, but only incidentally.

H. Harold Scott.

GROSSULE. **Empoisonnement par des ignames.**—*Ann. Soc. Belge de Med. Trop.* Brussels. 1921. May. Vol. 1. No. 2. pp. 159–161.

Six African natives, believed to have been drunk, ate tubers cooked in water of a species of yam. All had violent abdominal pain and five vomited the gastric contents; one, a woman who did not, died in the morning. The five men were brought to hospital 48 hours

later, when they were weak, with pale skin, cold sweat and small pulse. The next day they returned by their own wish to their village, 5 kilos distant, and on the way one died suddenly of heart failure. The yam in question is known to be very poisonous and wild pigs that eat it are said to die. The poison is eliminated by prolonged boiling.

A. G. B.

BAKER (C. R.). **Report of a Case of Shark Bite.**—*U.S. Nav. Med. Bull.* 1922. May. Vol. 16. No. 5. pp. 881–883. With 1 plate.

The unhappy victim—a strong well-developed young marine—bathing with some messmates at Cape Haitien (Haiti), dived into a large school of small fish. Almost immediately his messmates saw the tail of a shark, and about ten seconds later the poor fellow, coming to the surface, cried out "Brothers, the shark got me." He was able to swim a distance of about 12 ft. to a landing, whence, after the improvization of a tourniquet, he was rushed off in an ambulance to hospital, and there within about ten minutes his wounds were cleaned and sutured and dressed under ether. But though measures were taken to forestall shock, he died in shock within six hours. Though his wounds, which involved the left thigh from just below the great trochanter to the knee-joint, went right down to the bone, the actual loss of tissue was not co-extensive, and the sciatic nerve and femoral artery were uninjured.

A. A.

HEHIR (Patrick). **Effects of Chronic Starvation during the Siege of Kut.**—*Brit. Med. Jl.* 1922. June 3. pp. 865–868.

This interesting paper, here summarized in barest outline, places on record the state of nutrition and general health of the Kut force during the penultimate week of the siege, which lasted for the 148 days ended on April 29, 1916. It is noted that the 6th (Poona) Division, which made up the bulk of the garrison, reached Kut worn out by physical hardships. Details of the ration are given as regards proteins, hydrocarbons, carbohydrates and salts. The most serious deprivation was that of fats; bacon and butter failed early, and the deficit was not met by the horseflesh, which was practically fatless. In April the issue of salt ceased. Tables of the rations issued on various dates, both for British and Indians, are given; one notes that green-stuffs, herbs and grass, 2–4 oz., figure up to the end. The respective calories in March were 1,975 (British) and 1,550 (Indian), as against the normal of 3,600 and 3,100, and from April 12 onwards 1,850 and 1,110. On April 25, 15 men were dying daily, 5 from the direct effects of starvation and 10 from the same cause plus some simple malady. The author discusses the loss of weight—averaging 12·5 lb. for British and 17 lb. for Indians—the lowering of body temperature towards the end, the physical incapacity engendered, the inclination to sleep, the reduction of the pulse rate—by an average of nine beats per minute—and the mental attitude of the garrison.

The remarks on the chief diseases met with in chronic starvation are of special interest. *Diarrhoea* was the most prevalent disorder. On April 16 the author noted:—

"Early in April we began getting cases of very watery and severe diarrhoea with vomiting, cramps in the legs and abdomen, profound

prostration, subnormal temperature, pulselessness, suppression of urine, and collapse. The majority of these cases rallied, but many of them became intensely collapsed and died on the second, third, or fourth day, some after a feeble attempt at reaction, most of them without manifesting any disposition to recover. I have seen practically all these cases; they were not true Asiatic cholera, though clinically very like it. . . . In a large number of instances the stools were examined by a bacteriologist expert, Captain H. H. King, I.M.S., and in none were cholera spirilla discovered. . . .

"I was of opinion that the vast majority of these were ordinary cases of diarrhoea in men whose resistance had disappeared, whose stamina was greatly lowered, and whose heat-generating powers were so reduced that once a drain of any kind occurred from the body they were incapable of rallying; the low state of vitality, and especially the absence of any fuel in the system, rendered resuscitation impossible or highly improbable. The condition is one of the common accompaniments of every lasting famine in India, and has during these famines been repeatedly mistaken for genuine cholera. In the terrible and widespread famine of 1877–78 in India this form of diarrhoea was responsible for the death of most of the famine-stricken."

There was much *dysentery*, slight or severe, the symptoms and course something like those of bacillary dysentery, but its bacteriology was not determined. *Chronic starvation debility* is defined as "a stage in chronic starvation from which recuperation cannot take place . . . all capacity to assimilate food has permanently disappeared." In many cases it passes imperceptibly into death.

Scurvy and *beriberi*.—As has already been published [see this *Bulletin*, Vol. 16, pp. 387 and 395], the British, fed on horseflesh and white flour, developed beriberi, whereas the Indians, refusing horse and provided with atta or coarse barley flour and dal (lentils), went down with scurvy.

Discussing the treatment of chronic starvation the author confirms the belief that the greatest caution is necessary in returning to ordinary food; solid food is inadmissible, and only the most digestible fluids should be allowed. In point of fact the garrison on capitulation was put on the coarse rations of the Turk, chiefly brown rye bread and biscuit, which was responsible in May for 1,500 cases of diarrhoea and 200 deaths. The author was one and a half years regaining his normal weight.

A. G. B.

Ogilvie (W. H.). **Effects of Chronic Starvation during the Siege of Kut.** [Correspondence.]—*Brit. Med. Jl.* 1922. Aug. 5. p. 237.

The effects of chronic starvation here noted, which were observed in the Jubbulpore district during the famine of 1897, are irreparable atrophy of the glandular elements of the intestinal wall, signalized in children by atrophy of the buttocks. In children also cancrum oris was a common affliction.

A. A.

Diénot. **Au sujet d'un procédé peu connu pour la conservation des objets en caoutchouc.**—*Arch. Méd. et Pharm. Milit.* 1922. June. Vol. 76. No. 6. pp. 728–729.

The author found that the substances usually recommended as preservative of rubber articles—talc, tallow and vaselin—were useless

in the Algerian Sahara, where the summer temperature varies between 45° and 50° and describes a method of keeping them in an atmosphere impregnated with petrol fumes which was quite satisfactory.

A. G. B.

HOUSSIAU. **Notes de Thérapeutique Coloniale à l'usage des practiciens d'Europe.**—*Bruxelles-Médical.* 1921. Oct. 15. Year 1. No. 12. pp. 391–392.

The author advises his European colleagues on the use of emetine. He finds the best guide to dosage to be the onset of neuritis of the lower extremities. If there is decided difficulty in walking he counsels to reduce the dose or remit it for a week. As a result of the appearance of such symptoms in children of 4 and 15 months he does not exceed doses of 0·5 cgm. up to 6 months, 1 cgm. from 6 to 12 months, and 2 cgm. from 1–2 years.

In the tropics sounds and bougies become soft and often stick together. He finds an admirable substitute to be an elephant's hair. It is rigid, solid, and has an extremity of a fineness such as no bougie can attain. He has polished them with emery paper and has a series of different calibres. They never collapse and need little care. They can be boiled, but it is better to wash them with an antiseptic.

Finally, he warns his colleagues not to send to Tropical Africa anyone with a head injury which has damaged the brain or membranes. These persons when they contract malaria have violent headaches which often persist after recovery, and they soon suffer from cerebral irritability.

A. G. B.

HOFFMAN (Frederick L.). **Climate and Health in the South American Tropics.**—Reprinted from *Monthly Weather Review.* 1922. Jan. p. 9.

The author observes that much of what has been written on the tropical climate of northern South America is seriously misleading and a deterrent to the settlement of a vast region having enormous economic possibilities. He never suffered the slightest inconvenience from heat. The difficulties as regards health are not essentially climatic, but are concerned with food, clothing, housing and habits, all of which are subject to intelligent control.

A. G. B.

WU LIEN TEH. **The Effect of the Sun's Rays on Hats in Summer.**—*Nat. Med. Jl. China.* 1921. Sept. Vol. 7. No. 3. pp. 128–130.

The author at Harbin on August 1, 1921, took the temperature inside 24 varieties of hats for 20–30 minutes and tabulates the results. The thermometer recorded 110° in the sun and 92° in the shade. An English pattern of stiff straw hat gave the highest temperature, 110° F., and four varieties of helmet, khaki or white, the lowest, 98°–99°. It is concluded that the helmet, properly ventilated, is the best headgear for summer in North China, and that the soft Tientsin straw hat made of hemp threads can be recommended. The stiff straw "boater" is quite unsuitable.

A. G. B.

PASKIND (H. A.). **Some Differences in Response to Atropine in White and Colored Races.**—*Jl. Lab. & Clin. Med.* 1921. Nov. Vol. 7. No. 2. pp. 104–108.

It has been observed that small doses of atrophin cause slowing of the pulse rate. The author compared the action of such doses in 20 white and 20 coloured patients, all suffering from venereal disease, otherwise well and comparable groups in all respects. After the injection of 1/60th grain under the skin the pulse rate in the white men became slower in five minutes, the slowest rate was reached in 10–15 minutes, and thereafter there was acceleration; after 1/30th grain slowing was very transient. In the negroes retardation was rare and, when it occurred, slight. The details show that whereas in the white man there was an average slowing of 10 beats per minute, in the negro the average was not greater than one beat per minute. This action of atropine is central.

A. G. B.

BEVIS (W. M.). **Psychological Traits of the Southern Negro with Observations as to some of his Psychoses.**—*Amer. Jl. of Psychiatry.* 1921. July. Vol. 1. No. 1. (Old Series, Vol. 78). pp. 69–78.

This paper is interesting, more particularly its statistics of the psychoses of the coloured patients in Southern State institutions in 1920. Of 2,732 cases admitted the following is the percentage analysis:—alcoholic psychoses, 0·5; cerebro-spinal syphilis, 6·0; paresis, 5·0; manic-depressive, 24·0; senile, 9·0; dementia praecox, 26·0. Of suicide, 5 cases only, 3 being male and 2 female.

A. A.

WOOD (E. J.). **Sir Patrick Manson: the Father of Tropical Medicine.**—*Amer. Jl. Trop. Med.* 1922. July. Vol. 2. No. 4. pp. 361–368. With 1 plate.

From this appreciative account we may extract the following perspicacious passages:—

"The death of Sir Patrick Manson in his seventy-eighth year will be regretted throughout the whole civilised world but especially in those vast tropical areas which either directly or indirectly have been so helped out of disease into health through his activities. In his earlier work he was a veritable torch-bearer making his own road as he went, for none had preceded him; but he carefully blazed the trail and now unknowingly or thoughtlessly every day in our work we travel that safe course laid out by him so many years ago unmindful of the difficulties and hardships which he met silently and alone. It matters not what branch of tropical medicine may interest us, we will not go far in it without seeing the wise part played in its early history and development by Sir Patrick Manson. His observations being made with the precision and accuracy which characterised all he ever did, remain in spite of the years, our safest guide.

"A review of his life and work furnishes a striking example of the possibilities of real achievement of a single life. Probably no man of his period accomplished so much and certainly no single individual ever did a greater amount of real creative work—work, which in the truest sense was original research and of a sort which proved to be of the most extraordinarily utilitarian character. . . .

"In itself Manson's discovery of the mosquito as an intermediary in the transmission of filariasis was of comparatively small moment, but measured by its effect on other problems it must ever be regarded as one of the greatest of the epoch-making contributions. . . .

"There was no sham and no false pretense about Sir Patrick Manson as I knew him. His early difficulties, his mistakes, his ignorances and his lack of professional equipment to meet his problems were related in the frankest way. . . .

"The stranger soon threw aside his reserve in the presence of Sir Patrick Manson."

A. A.

JOURNAL OF TROPICAL MEDICINE & HYGIENE. 1922. June 15. Vol. 25. No. 12. pp. 155–168.—**Sir Patrick Manson as a Man of Science, as a Practitioner of Medicine, as a Helminthologist, as a Bacteriologist, as a Dermatologist, as an Observer, an Organiser.**

The chief interest of this "Special Manson Number" is an instalment of an autobiography dictated to Dr. L. W. SAMBON.

A. A.

HOFFMANN (W. H.). **Ein Denkmal für Carlos Finlay in Habana.**—*Berlin Klin. Woch.* 1921. No. 41. p. 1231.

A short note on the memorial statue of Carlos FINLAY recently unveiled in Havana. To FINLAY is due the credit of having been the first to suspect a causative connexion between *Stegomyia fasciata* and yellow fever, a theory which, when it was propounded by him in 1881, was beyond the grasp of most of his contemporaries. In claiming more than this incontestable honour for FINLAY, the author is injudicious.

A. A.

BRIDGES (D.). **Relation of Ankylostomiasis to Malaria.** [Report of Paper.]—*Brit. Med. Jl.* 1921. July 30. p. 149.

The report of this paper states that in the Federated Malay States malarial fevers are now as bad as, if not worse than, they were five years ago, notwithstanding all the antimalaria measures practised, and that the mortality is greater. Cases of ankylostomiasis were also more numerous both among native races and among immigrant Orientals. Arguing from the premises that ankylostomiasis lowers the natural resistance of the body, the author attributes the sustained prevalence of malaria and its present more fatal character to the concurrent ankylostomiasis, and suggests that one might go further and regard the worm as being as much responsible as the mosquito for the malaria. This is followed by a vigorous advocacy of methodical treatment of ankylostomiasis, particularly on the preventive side.

A. A.

ELLIS (Aller G.). **Betelnut Chewing and its Effects, including Cancer of the Mouth.**—*Arch. Intern. Med.* 1921. Sept. 15. Vol. 28. No. 3. pp. 252–267. With 1 text fig.

The author has studied his subject at Bangkok, where betelnut chewing is exceedingly prevalent. Much of the data he presents is the result of a questionnaire sent to 25 of his colleagues. After discussing in turn the various ingredients of the "chew" and the effects attributed to them by various writers, he sums up :—

"The chief or staple ingredients, therefore, are betel leaf, areca nut, black catechu, lime-turmeric paste and tobacco. Four of these, without including tobacco, have medicinal qualities. In physiologic action three of them are astringent. Other attributes possessed by or claimed for the

substances collectively are those of carminative, tonic, stomachic, antiseptic, sialagogue, antidiaphoretic, vermifuge and dentrifrice. The effect of the mixture when chewed is moderately stimulating and exhilarating. The effect on the beginner is something like that of using tobacco the first time ; giddiness and faintness occur but not nausea."

The chief local effects are on the mucosa of the mouth, especially that of the lower lip, which becomes denuded and furrowed, and the teeth. On these the coloured lime deposits and the concretion formed, first on or near the extremity, gradually extends over the root till at length a surprisingly short portion may be left uncovered. This is well shown in the illustrations of extracted teeth. There seems to be no doubt that betel chewing prevents decay of the teeth, but loss of sound teeth is common. The sequence of events suggested is pyorrhea, retraction of the gums, loosening of the teeth, but Dr. DAY, dentist at the Chulalongkorn Hospital, states that of the loose teeth removed by him in not more than 10 per cent. was pyorrhea exhibited. Other factors in the loosening of the teeth are the mechanical pressure of the concretions on the gums and alveolar processes, and the shifting of the line of pressure by opposing teeth from vertical to diagonal because of concretions forming unequally. The author is not prepared to gauge the importance of the three factors mentioned. Cleaning of the teeth would seem to lead to their less frequent loss. The constitutional effects of chewing seem to be slight.

The author made a bacteriological examination of the mouths of 20 patients and summarizes the results. Cocci, bacilli and spirochaetes were demonstrated in all and the red-coloured saliva was found to possess no bactericidal property.

Finally he sought to ascertain whether the common assumption of a relation of betel nut chewing to cancer of the mouth had any basis in fact. A study of the statistics of cancer at the hospital for six years showed that of 102 cases operated on 52 were cancer of the lower lip and of these 44 per cent. were in women. Thus more than half the cases affected the lower lip, which is injured by the chewing, and the sex proportion is in support of such a relation, for in non-betel chewing countries 90 per cent. of the lip cancers were in men, and only 10 in women. However, these figures are insufficient for demonstration, the author's conclusion being that betel nut chewing does not frequently cause cancer of the mouth, but there are reasons for believing that, in an as yet undetermined percentage of cases, it does lead to this result.

The most serious effect is the loss of teeth, and the author thinks that a thorough study of the mechanism of their loss and of its prevention is desirable.

A. G. B.

ACTON (Hugh W.). **Researches on the Cinchona Alkaloids.**—*Lancet.* 1922. Jan. 21. pp. 124–128. With 1 chart in text.

Fourteen alkaloids have been isolated from the various species of cinchona : the curative action of cinchona bark in malarial fevers is attributable to two series of crystallizable alkaloids. According to chemical constitution these may be classified as (1) natural alkaloids—cinchonine, cupreidine and quinidine, with their respective isomerids cinchonidine, cupreine, and quinine ; and (2) hydroalkaloids severally corresponding with their respective natural alkaloids : these occur in very small quantities in most barks.

According to optical activity the two series may be classified as (1) dextrotatory—cinchonine, cupreidine and quinidine, with their corresponding hydroalkaloids; and (2) laevirotatory—cinchonidine, cupreine, and quinine, with their corresponding hydroalkaloids.

This paper is to demonstrate that in their pharmacological as well as in their optical and chemical relations the alkaloids show the same respective correspondence. The pharmacological action has been tested for toxicity to mammals, protozoa and bacteria; on digestive enzymes; for local effects on tissues; and for effects on blood and blood pressure.

The toxicity for paramoecium [see this *Bulletin*, Vol. 19, p. 103] varies with the pH of the medium, being greater in an alkaline than an acid medium.

On digestive enzymes the cinchonine series are more inhibitive than the cinchonidine series. The inhibition is most with trypsin, less with pepsin, and feeble with erepsin. The stronger the concentration the greater the inhibition; therefore the alkaloids should be well diluted and large doses should be avoided. The inhibition is less when the ferment is first allowed to get well to work; therefore the alkaloids should be given after a meal—$\frac{1}{2}$ to 2 hours after. The commercial sulphates should always be given with acids as they exhaust the free HCl of the stomach and thus further inhibit pepsin.

The eschar produced at the site of injection of quinine is a necrosis caused by strong acid solutions and precipitation of quinine base. A negative chemotaxis of leucocytes persists as long as unabsorbed alkaloid remains. The cinchonine series seem to be less anaesthetic to rabbit's cornea than the cinchonidine series.

It is well known that acid salts of quinine are haemolytic; but quinine base is not haemolytic. "The advocates of the quinine blackwater theory will now have to turn their attention to the various decomposition products of this alkaloid."

The fall of blood pressure that follows intravenous injection of quinine is well known. The depressor effect in all the cinchonine series is greater, being greatest with quinidine—the effect produced by injection of 1 mgm. of which is equal to that produced by 10 mgm. of quinine. There will be danger therefore in intravenous injection of quinidine in large doses or to the young or feeble.

The action of cinchona alkaloids on the uterus under different conditions is experimentally studied. One conclusion is that doses of quinine large enough to be poisonous would be required to cause miscarriage.

General conclusions are that the dextrotatory alkaloids (cinchonine series) are more powerful than their laevirotatory isomerids (cinchonidine series); that the hydroalkaloids are stabler and more active in many respects than the natural alkaloids; and that the higher members of both series are more toxic to mammals, protozoa and bacteria than the lower members.

In the introduction reference is made to a certain confusion in the nomenclature of the alkaloids resulting from the standard of nomenclature being established before the relation between optical activity and chemical constitution was known. Also to the fact that in benign tertian malaria the dextrotatory quinidine is more efficacious than the laevirotatory quinine.

A. A.

Acton (Hugh William) & King (Harold). **The Nephelometric Estimation of Quinine in Blood.**—*Biochemical Jl.* 1921. Vol. 15. No. 1. pp. 53–59.

The authors refer to the observations of Morgenroth [see this *Bulletin*, Vol. 13, p. 81], who showed by physiological methods that quinine is held by, or stored in, the red corpuscles and that the surrounding plasma constantly contains a much lower proportion, and to those of Ramsden, Lipkin and Whitley, who found that the distribution of quinine was in favour of the serum by 3 : 1 [*loc. cit.* page 92.] They were unable to get reliable results by the nephelometric method of Ramsden and Lipkin, as described by them, until they had considerably modified it. The result of their experiments was to show that the distribution between corpuscles and serum is approximately equal.

A. G. B.

Crawford (J. Hamilton). **The Solubility of Quinine Hydrochloride.**—*Brit. Med. Jl.* 1922. June 3. pp. 874–875.

The hydrochloride of quinine is 20 times as soluble in water as the sulphate. In the intravenous injection saline or Ringer's solution is likely to be used, so the author, who writes from the Department of Pharmacology, University of Edinburgh, tested the solubility of the quinine salts in these solutions :—

Distilled water dissolved 1 part neutral hydrochloride in	35 parts.
Saline solution dissolved 1 part neutral hydrochloride in	100 „
Ringer's solution dissolved 1 part neutral hydrochloride in	110 „

(The Ringer's solution contained 0·85 per cent. NaCl the same proportion as the saline).

With Ringer the solubility lessens as the age increases, and if the solution is allowed to stand the quinine precipitates ; hence the the advantage of freshly prepared solutions. Tests of the acidity of acid quinine hydrochloride and of quinine and urea hydrochloride showed it to be practically the same ; each substance is equally soluble and the quinine and urea hydrochloride appears to possess no advantage over the acid salt.

A. G. B.

Neumann (Alfred). **Ueber Nekrosengefahr bei subkutanen Chinininjektionen.** [The Danger of Necrosis in Subcutaneous Quinine Injections.] —*Wien. Klin. Woch.* 1921. Aug. 25. Vol. 34. No. 34. p. 414.

The author prefers the hydrochloride of quinine in solution with urethane to the bihydrochloride for "subcutaneous" injections, as leading less often to necrosis. He refers to the work of Dudgeon and probably has in mind the mode of administration usually called "intra-muscular."

A. G. B.

Abrassart (M.). **Un cas d'intolérance quinique.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. May. Vol. 1. No. 2. pp. 149–151.

A month before his departure for a malarious country the patient took, experimentally, a tablet of 25 cgm. of bisulphate of quinine. Result—generalized swelling and redness of the skin, pain in head and back with feeling of prostration, fever, followed by a rash which was morbilliform or scarlatiniform according to the region. The symptoms persisted three

days. A month later, arrived at Elizabethville, he repeated the dose with the same results but more severe and of more rapid onset; the rash lasted a week. Ten days later the author gave him 2½ cgm. by the mouth; after a few hours he had a chill and fever, and the same treatment was followed by the same effects on the two succeeding days. Later the skin desquamated. Three months later the patient was taken into hospital and treated thus: adrenaline in 30-drop doses was given for five days, the patient was purged and took benzonaphthol and bicarbonate of soda in powder. On the test day chloride of calcium was given, an injection of 1 cgm. of quinine and, one hour later, 25 cgm. of the hydrobromide by the mouth. There was redness of the skin and some swelling, but no malaise. Later he received by injection 1 cgm. of quinine with half a mgm. of adrenaline, and an hour afterwards an intramuscular injection of 40 cgm. hydrochloride. Result—generalized erythema with pruritus but nothing more. Three days and again two days later the same procedure, but the second time the test dose was raised to 1 gm. Two days later he was able to take the ordinary dose by mouth of 25 cgm. and has continued to do so since.

Commenting on the case, the author points to the greater intolerance to oral than to intramuscular quinine, the increase of susceptibility when small and decreasing doses were given if the interval was at least a week, and the apparent efficacy of the preparatory treatment. He thinks that all candidates for the tropics should, before leaving home, undergo a quinine test.

A. G. B.

Broden (A.). **Intolérance à la quinine.**—*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. May. Vol. 1. No. 2. pp. 153–157.

Two cases are here described.

A young doctor had unpleasant symptoms after taking an "anti-neuralgic" cachet, reported to contain quinine. As he was intended for a tropical career it was necessary to test his tolerance. A dose of 10 cgm. of the hydrochloride was followed by lively itching, preventing sleep, and general erythema. He was then advised to take 1 cgm. daily, increased every third day by the same amount. Apart from an attempt to increase the dose more rapidly, with prompt symptoms of intolerance, this course was followed with success, and when the dose reached 15 cgm. it was safely augmented every third day by 2 cgm. When he left for the Congo he could take 40 cgm. daily, and he stayed in Africa uninterruptedly for seven years.

In the other case the intolerance was acquired. The patient, a man of 30, lived in Belgian Congo from 1911 to 1913 without fever and took 25 cgm. of quinine twice a week without inconvenience. After a period of leave he returned and shortly after had an attack of fever followed by haemoglobinuria. A fortnight later the fever relapsed, he took 25 cgm. of quinine and two hours later had a relapse of haemoglobinuria. A month later the same sequence of events. Later, having fever, he was persuaded to take 50 cgm. and had another haemoglobinuric attack. At Leopoldville the same experience was repeated and the patient was invalided. An attempt was made to treat him in Europe with 1 cgm. doses of the hydrochloride, but on two occasions this was followed by fever and malaise and he refused to persist.

The author suggests that intolerance did not develop till the patient was infected with malaria, and warns his readers of the caution necessary in treating haemoglobinuria during and after the crisis.

A. G. B.

Chabaud. **Sur un cas d'anaphylaxie à la quinine.**—*Arch. Méd. et Pharm. Nav.* 1922. July–Aug. Vol. 112. No. 4. pp. 337–340.

A child of nine, born at Saigon, had malaria (parasites found) at the age of three yielding to quinine and again at six after a visit to France.

In November, 1921, she had fever for which an injection of quinoform, 0·25 gm., was given. Result—violent headache, colour red passing to violet, respiration very difficult, and appearance of impending death. These symptoms ceased after 15 minutes but were succeeded by headache, urticarial eruption with intense pruritus, and respiratory embarrassment. The author consequently endeavoured to desensitize the patient, commencing with an injection of 1 mgm. Anaphylactic symptoms were produced by any dose greater than 2 mgm., and this amount was given daily with enemata of arsenobenzol every five days. Then, since the attacks of fever were increasing, 0·25 gm. quinoform was injected, with the result a few minutes later of rigor, cough, and intense respiratory difficulty necessitating a call for oxygen.

It was now decided to give a small " vaccinating " dose an hour before the exhibition of the therapeutic dose. An injection of 0·01 gm. quinoform was followed after an hour by one of 0·49. The next day 0·02 and 0·48; the next 0·04 and 0·46; the next 0·10 and 0·40, repeated for five days; the next 0·20 and 0·30; till on the eleventh day 0·50 gm. was injected without the preceding dose and no untoward symptoms followed. Thereafter resort was had to cachets of 0·25 gm., and in January the child was quite recovered and taking her quinine regularly.

A. G. B.

KERAMOPOULOS (E.). **La méthode des transfusions sanguines et la prophylaxie des accidents quiniques.**—*Presse Méd.* 1922. June 24. Vol. 30. No. 50. p. 544.

In September, 1920, the taking of quinine for malaria was followed by dyspnoea, faintness and general urticaria. In November and February the same sequence of events. Meantime the patient's condition became worse, and by September the spleen had increased in size and anaemia became very evident. Injections of arsenobenzol, 0·15 gm., and of collargol had a similar effect to quinine. In October a subcutaneous injection of quinine was preceded by an intravenous of normal saline containing carbonate of soda, but with the same result. Transfusion of blood was then undertaken. Every second or third day 20 cc. was transfused from the patient's daughter to his own veins. The general state improved steadily and a month later the red cells and haemoglobin count had risen and the weight had increased by two kilos. In November 10 cgm. of hydrochloride of quinine was well borne, and a fortnight later a gramme in two doses was being taken daily.

A. G. B.

SCHMIDT (Hans). **Das Antimon in der neueren Medizin : die Literatur 1906–1921 in Referaten.**—*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1922. Vol. 26. Beihefte I. pp. 1–68.

In this useful brochure brief summaries of 300 papers, published in the last 15 years, on the uses of antimony in medicine are assembled and classified, from PLIMMER and THOMSON's important paper: " Further Results of the Experimental Treatment of Trypanosomiasis in Rats "—important because it introduced the era in which antimony came into its own again—to quite recent publications. The diseases concerned are trypanososomiasis, human and animal; spirochaetoses —syphilis, yaws, relapsing fever; leishmaniasis; malaria; leprosy; ozaena; granuloma venereum; bilharziasis; filariasis; and in an appendix is similarly recorded the employment of antimony in recent years in veterinary medicine.

In the introduction an interesting survey is given of the esteem, or the reverse, in which antimony has been held through the centuries. Gray antimony ore was used from the earliest times in the East as

" eye-salve " for protection against endemic eye diseases and, according to REUTHER for Oriental sore. Theophrastus PARACELSUS seems to have popularized its use to an extraordinary extent; and in 1604 Basil VALENTINE published his " Trumphant Chariot of Antimony " in which the action of the drug in syphilis, leprosy, plague, cancer, malaria and other diseases and conditions was described. Louis XIV's recovery from typhoid fever in 1657 was attributed to tartar emetic, and the same monarch in 1720 paid a high figure for the secret of *Poudre de Chartres*, a decoction of antimony with potash, but the use of antimony declined till in 1900 tartar emetic was employed to a small extent only, as an emetic and expectorate. As is pointed out, it is research in tropical medicine which has not only reintroduced antimony but precised its parasiticidal value. Of the many preparations known to the practitioners of the middle ages tartar emetic, and the corresponding sodium salt, alone have made good, and oral administration has given place to intravenous. Organic compounds such as stibenyl are now on their trial.

A. G. B.

KORNS (John H.). **Toxicity of Antimony in Rabbits.**—*China Med. Jl.* 1921. Nov. Vol. 35. No. 6. pp. 564–566.

With a view to ascertaining the effect of long continued use of antimony and of determining which form of the drug is least toxic, the author injected a series of rabbits with solution of either potassium antimony tartrate, or the similar sodium salt, or colloid antimony trisulphide, and tabulates the results. Some rabbits received 40 injections in a period averaging 110 days without harm during life or changes in the tissues at autopsy. The preparations were about equally toxic in excessive dosage. Reasoning from rabbits to kala azar patients the author suggests that a larger total amount of antimony is admissible than is generally thought and that the dose may be quickly pushed to the maximum.

A. G. B.

SOCA (F.). **A propos d'un cas de polynévrite émétinique suivie de mort.** —*Bull. et Mém. Soc. Med. Hôpit. de Paris.* 1922. May 18. Year 38. 3rd Ser. No. 16. pp. 768–771.

The author, Professor at Montevideo, writes that whenever he reaches the dose of 8 cgm. of emetine hydrochloride repeated on several successive days, signs of poisoning compel him to stop the drug.

He details the history of a patient admitted to hospital for supposed amoebic dysentery who, between March 16th and April 3rd, received 1·05 gm. (maximum dose 9 cgm.). Nine days later there was loss of strength and pain in the limbs, walking was difficult, pulse 130–145. Difficulty in swallowing is also mentioned and cardiac dyspnoea. The pneumogastric nerve was tender to pressure. A search for emetine in the urine on one occasion was negative. By April 17th there was decided improvement and on May 8th not much the matter, but on the 20th the patient got suddenly worse and died with bulbar symptoms. The author regards the neuritis as peripheral and not of central origin.

A. G. B.

Arrillaga (F.). & Guglielmetti (J.). **Action du chlorhydrate d'émetine sur le coeur.**—*C.R. Soc. Biol.* 1921. July 23. Vol. 85. No. 27. pp. 596–597.

As a result of experiments on frogs and dogs the authors find that emetine hydrochloride must be regarded as a cardiac poison. It often produces auricular-ventricular dissociation. It exerts its action on the excitability and conductivity of the heart. In most cases death is accompanied by auricular fibrillation. The venous way should not be employed in therapeutics because it exposes the patient to cardiac accidents and has no real advantage.

A. G. B.

Bais (W. J.). **Dood door emetine.** [Death from Emetine Poisoning.] —*Geneesk. Tijdschr. v. Nederl.-Indië.* 1921. Vol. 61. No. 5. pp. 500–504.

A fatal case of emetine poisoning in a Javanese woman, the total quantity of the drug administered being only 1,080 mgm., divided over three series of six injections each of 60 mgm. in six weeks.

The clinical symptoms, muscular weakness and acceleration of the pulse, only became apparent two days after the last injection given. Post-mortem the most important lesion detected was a serious parenchymatous degeneration of the heart muscle.

W. J. Bais.

Akamatsu (Muneji). **Ueber die pharmakologischen Wirkungen des Oleum Chenopodii.**—*Kyoto Igaku Zassi.* 1920. Sept. Vol. 17. No. 10. [In Japanese pp. 1154–1166. German summary pp. 79–80.]

The following is an abstract of the German summary of the action of oil of chenopodium as investigated by Akamatsu: In the earthworm the muscle is excited to strong tonic contraction. The isolated uterus of the rabbit and the isolated small intestine of the dog and cat are stimulated by weak emulsions, and are first stimulated and then paralysed by concentrated emulsions, but the isolated small intestine of the rabbit is paralysed from the first. The poisoned gastrocnemius of the frog reacts more strongly to electrical stimulation but tires more quickly (than the control). The isolated frog's heart is paralysed in diastole.

A. A.

Norwood (B. F.). **A Case of Poisoning by Oil of Chenopodium.**—*U.S. Nav. Med. Bull.* 1921. Oct. Vol. 15. No. 4. pp. 818–823.

The patient, a sergeant of the U.S. Marine Corps, was admitted for amoebic dysentery microscopically diagnosed. He received, by error, minims having been understood as mils by a subordinate, 11 measured mils of oil of chenopodium in 20 mils of castor oil within two hours, 10 mils at a single dose.

Within 30 minutes there was complaint of ringing in the ears and dryness of lips and tongue. The pulse rate was 60, the respirations 11, shallow. The condition verged on collapse. Active therapeutic measures were instituted. Three hours later he became semi-stuporous and quite deaf, with marked prostration. On the 2nd, 3rd and 4th days he was

in a state of stupor from which he could not be roused. Deglutition became difficult and the bowels did not act. The pupils were sluggish and slightly unequal, the temperature 103·2°, the respiration extremely shallow, the pulse irregular and weak. On the 4th day there was active delirium and the evacuations were passed in the bed. Owing to difficult deglutition it was not easy to give nutriment by the mouth. On the 5th and 6th days delirium was maniacal. On the 7th general collapse was feared and the prognosis was grave; on the 8th there was slight improvement and on the 9th consciousness returned. Delusions and hallucinations continued and extreme deafness persisted. Thereafter recovery gradually took place. The hearing became normal at the end of the 4th week. Blood-pressure observations were not made.

Weekly examinations for 10 months failed to reveal amoebae.

With respect to dosage, the author observes that a drop is not equivalent to a minim and that drops vary with the dropper and other factors. With a number of droppers he found that the number of drops to a mil varied from 36 to 45, the inference being that the measured dose is the safe and reliable dose. Reference is made to SALANT's paper [this *Bulletin*, Vol. 12, p. 195].

A. G. B.

EVERS (Hans). **Schwere Hörstörungen nach Chenopodiumgaben.** [Grave Disturbance of Hearing after Chenopodium Administration.]—*Deut. Med. Woch.* 1921. July 28. Vol. 47. No. 30. pp. 857–858.

The patient was a woman of 40 years. Her general condition was feeble and her haemoglobin content 57 per cent., and for five years she had suffered from spasmodic indigestion, suggesting slight kidney trouble. Her hearing had always been good, and there was no disease of the ear. Ascaris eggs having been suspected or reported in the stools, she was treated for worms. On a given day, at intervals of two hours, four doses of oil of chenopodium were administered, each dose consisting of two capsules and each capsule containing 16 drops of the oil and "0·2 menthol." Vomiting occurred immediately after the last dose, and was followed by somnolence, giddiness, sudden loss of hearing and sudden loss of sight. All the symptoms disappeared in the course of a few hours, except the loss of hearing. No worms appeared in the stools. Nineteen months afterwards the ear trouble still persisted.

A. A.

PARREIRAS (Decio). **O chenopodio e a sua toxidez.** [The Toxicity of Chenopodium.]—*Brazil Medico.* 1921. Dec. 17. Year 35. Vol. 2. No. 23. p. 352.

Refers to observations of LELLIS and DE ALMEIDA on the toxicity of chenopodium [see this *Bulletin*, Vol. 19, p. 252.]

After four years' experience in Campos, where an average of 2,500 cases per month, or a total of 100,000 cases, were treated with chenopodium alone, the writer would go further than LELLIS by affirming chenopodium to be a perfectly safe drug, productive of no more serious effects than occasional slight tingling of the palmar and plantar regions, transitory hypoacusia and slight oedema of the lower extremities.

In Rio Bonito the Rockefeller Foundation recorded two fatal accidents. According to Dr. Lewis HACKETT, of the same institution, death was caused in 14 persons of a total of 644,000, or an average of 1 in 46,000—a mortality rate much lower than in the case of

chloroform (1 in 4,000), ether (1 in 16,000) or diphtheria antitoxin. In the writer's opinion there is no justification for the administration of the drug in quantities so small as to diminish its value as an anthelminthic.

He gives a table of dosage used in Campos :—

1–10 years	2 drops for each year of age.
10–12 ,, ...	25 drops.
12–15 ,, ...	30 ,,
15–20 ,, ...	40 ,,
20–50 ,, ...	50 ,,
50 years and upwards ..	40 ,,

A. G. B.

TATE (G.). **Physiological Standardisation of Digitalis with Special Reference to a Method Suitable for Use in India.**—*Indian Med. Gaz.* 1921. June. Vol. 56. No. 6. pp. 205–207.

From the extremes of heat and moisture occurring at different seasons and places in India considerable variations must be expected in the amount of glucosides present in Indian grown digitalis ; also owing to the heat the tincture deteriorates. The standardization of Indian tincture of digitalis appears not to be easy.

As ouabain (crystalline strophanthin) is fairly stable the author recommends the establishment of a standard by comparison with it : the minimum amount of ouabain per given weight of frog at a specified temperature producing the same effect—i.e., systolic arrest—as an approved standard digitalis tincture could be determined and used generally as a standard.

It would be an advantage if once a year during the cold weather a tincture made from the mixed Indian leaves stored in depots were compared clinically with a sample of standardized English digitalis in a case of auricular fibrillation.

A. A.

BOYD (Augusto S.) & JOSEPH (Morris). **Intrarectal Administration of Salvarsan.**—*Proc. Med. Assoc. Isthm. Canal Zone.* 1918. Jan.–June. Vol. 11. Pt. 1. pp. 77–82.

In view of the facts that in some patients the intravenous method of giving salvarsan is impossible without dissection of the vein, which is undesirable when injections have to be repeated, and that untoward effects are met with by all physicians, the authors, in Panama, tried administration by the rectum. The salvarsan or neosalvarsan is prepared just as in the intravenous method, and is made up with 50–100 cc. of fluid. The patient is put to bed and about 10 minutes allowed for the injection, which is preceded by a cleansing enema. 0·9 gm. neosalvarsan and 0·6 gm. old salvarsan may be thus given every three days for three to five times.

Six cases of syphilis so treated are quoted, and two of relapsing fever are mentioned ; in all the immediate results appear to have been excellent. No reaction was ever seen. They conclude that the intrarectal method is as successful as the intravenous in the treatment of relapsing fever and syphilis ; that untoward effects are eliminated by slow absorption ; that no special skill is required ; and that it is the method of choice in nervous or obese subjects, or in very anaemic women and children.

A. G. B.

DE CASTRO (A. Bayley). **Iodine Injections for Septic Conditions.**—*Indian Med. Gaz.* 1921. Oct. Vol. 56. No. 10. p. 375.

The author, who is Jail Medical Officer, Port Blair, Andaman Islands, has employed intravenous iodine injections for septic conditions for about a year and has had "very novel and highly gratifying results," especially in ulcerative processes and phagedena. He starts with an injection of tincture of iodine, ℥5 in 1 cc. normal saline, and goes up to ℥20 in 10 cc., given every second day or, in bad cases, every day. In the author's words, an unhealthy looking surface freshens up and takes on a nice healthy look, sloughs are cast off, profuse discharges of pus stop, and healthy granulations start to shoot up all round. Fever and pain disappear. The white cell count rises to 15,000 or 20,000. In future he proposes to start at ℥ 20 of the tincture and work up to 80, which represents 2 gr. of iodine. In only two instances has there been a marked reaction. A detailed record of the cases treated is being made [see also this *Bulletin*, Vol. 18, pp. 281–2.]

A. G. B.

AMBROSE (Lodilla). **Notes on Tropical Diseases.**—*New Orleans Med. & Surg. Jl.* 1922. May. Vol. 74. No. 11. pp. 717–721.

ARCE (Julian). **Influencia de la última guerra sobre el estudio de la medicina tropical y sobre la ensenanza médica general.**—*An. Facul de Med. de Lima.* 1920. Vol. 6. pp. 101–108.

BANCE (J. E.). **Toxicologie prélèvement des viscères pour l'analyse.**—*Arch. Inst. Pasteur. de l'Afrique du Nord.* 1922. June. Vol. 2. No. 2. pp. 253–258.

BARDOU. **D'un traitement populaire des maladies d'estomac en Tunisie.**—*Arch. des maladies de l'appareil digestif et de la nutrition.* 1921. Oct. Vol. 11. No. 5. pp. 335–337.

BRODEN. **Les caractéristiques principales de la Pathologie Exotique.**—*Bruxelles-Médical.* 1921. Dec. 1. 2e année. No. 3. pp. 61–66.

BRUMPT (E.). **Les médecins et les Colonies. Le problème Médico-Colonial: le recrutement.**—*Presse Méd.* 1922. June 7. Vol. 30. No. 45. pp. 937–939.

CAMAIL (des T. C.). **Quelques considérations sur la pathologie de la population indigène de Madagascar.**—*Presse Méd.* 1922. Sept. 6. Vol. 30. No. 71. pp. 1486–1488. With 2 text figs.

CELESTINO DOS SANTOS (Murillo). **Indice neutrophilo normal na Bahia.**—*Brazil Medico.* 1921. Nov. 12. Year 35. Vol. 2. No. 18. pp. 269–270.

COMBEY (J.). **La médecine française en Tunisie.**—*Presse Méd.* 1922. June 14. Vol. 30. No. 47. pp. 977–986 & 992. With 8 text figs.

CUNNINGHAM (J.). **India's Debt to Medical Research, being the Presidential Address delivered to the Medical Research Section, Indian Science Congress, 1922.**—*Indian Med. Gaz.* 1922. June. Vol. 57. No. 6. pp. 201–204.

GRABHAM (Michael C.). **Bradshaw Lecture on Subtropical Esculents. Delivered before the Royal College of Physicians of London.**—*Lancet.* 1921. Dec. 31. pp. 1357–1362.

HARRIES (D. J.). **Surgical Problems and Difficulties in the Tropics.**—*China Med. Jl.* 1922. Sept. Vol. 36. No. 5. pp. 385–391. With 3 charts. [See this *Bulletin*. Vol. 16. p. 225.]

HEHIR (P.). **Epithelioma in Kashmir.** [Correspondence.]—*Lancet.* 1922. Feb. 4. p. 250.

DEN HEIJER (J. K.). **Een geval van Angiosarkoma van de lever.**—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1922. Vol. 62. No. 3. pp. 372–380.

LECERCLE. **Maroc et chirurgie.**—*Arch. Méd. et Pharm. Milit.* 1922. Mar. Vol. 76. No. 3. pp. 291–298.

LOW (C. W.). **The Medical Aspect of Life Insurance in China.**—*Nat. Med. Jl. China.* 1922. June. Vol. 8. No. 2. pp. 94–100.

POLIDORI (V.). **Fonctionnement du laboratoire de Bactériologie clinique de l'hôpital indigène du Protectorat pendant l'année 1920.**—*Bull. Soc. Méd.-Chirurg. Indochine.* 1921. July. Vol. 12. No. 1. pp.83–86.

HEAT STROKE.

i. Richet fils (Charles). **Recherches expérimentales sur le coup de chaleur et l'insolation. Chimiothérapie ; hémoclasie a calore : accoutumance ou immunité.**—*Jl. de Physiol. et de Path. gén.* 1922. Vol. 20. No. 1. pp. 59–71.

ii. ——. **Contribution à l'étude et à la thérapeutique expérimentales du coup de chaleur.**—*C.R. Soc. Biol.* 1921. Oct. 22. Vol. 85. No. 29. pp. 713–714.

iii. ——. **Accoutumance expérimentale à l'insolation ou à la chaleur. Accoutumance ou immunité.**—*Ibid.* Nov. 26. No. 34. pp. 980–981.

i. The experiments were carried out during the extreme heat of July, 1921. The animals used were mice, rats and rabbits. They were placed in glass boxes exposed to the sun or in a dry stove. When extra heat was required for some rabbits they were attached to a metal plate heated below by steam. The upper surface on which they were placed was covered with cotton wool and care was taken not to burn them.

Heat stroke in mice has the following features : they did not suffer much in the stove at 37° C. ; but at 39° or 40° they became restless after about five minutes ; after 20 minutes convulsions and death occurred. Often there was coma after the convulsions. Increased respiration is evident in mice ; but the limit is difficult to estimate since at the ordinary temperature the mouse [? under the conditions of the experiment] respires 120 to 160 times each minute and with extreme heat it is impossible to count the respirations.

The lesions in the rat were those usually observed : blood partly or entirely coagulated in the vessels, death with heart in systole, pleural and pulmonary ecchymoses, and sometimes cerebral haemorrhages [*cf.* this *Bulletin*, Dyke (C. S.), Vol. 16, pp. 58–59 ; Koizumi, Vol. 16, p. 66]. A table gives a résumé of the author's experiments on mice :—

Age in Days.	Weight in Grammes.	Resistance in Minutes.	Resistance of Adults in Minutes.
3	1	8	36 36
15	4	20	25
21 42	7 13	60 47	29 29 40
35	12·5	45	27

A table is given with similar statistics for adult rats and mice exposed to the sun or in the stove. The most useful drug with the usual methods employed for combating heat-stroke was morphia. Oil of camphor and caffeine had some good effect.

The action of alcohol was indifferent and adrenalin and ether were without any therapeutic value. Kola, almost a specific for muscular fatigue in man, had no effect on animals suffering from sunstroke or the prolonged effect of heat. The destructive action of heat on the blood was examined in mice and rabbits :—

(*a*) Coagulation.—Mice were placed in a box for 20 minutes at 40° C. They were removed and killed at intervals as shown in the following " table " :—

Number of Mice.	Interval between Removal from Box and Experiment on Coagulation in Minutes.	Time of Coagulation in Minutes.
1	0	2
2	10	7′55″
3	23	3′45″
4	50	7′
5	70	15′(?)
Control 1	—	13′50″
,, 2	—	13′55″

Thus coagulation, accelerated at first, is retarded at a later interval.

(*b*) *Modification of appearance of the blood.*—Whereas in certain colloidoclasic states the venous blood is a brilliant red, in the animals under experiment the arterial—and still more the venous—blood was black.

(*c*) *Leucopenia.*—For these experiments rabbits were used.

——	Number of White Corpuscles.		
	Rabbit 1.	*Rabbit 2.*	*Rabbit 3.*
Previous to heating ..	7,600	7,600	8,400
3 min. after it began ..	—	4,700	—
12 ,, ,, ,, ..	3,800	—	—
22–24 ,, ,, ,, ..	3,000	—	4,900

The serum of a rabbit subjected to extreme heat injected into another rabbit causes a leucopenia more intense than does the serum of a normal rabbit, showing that the leucopenia observed in the heated animals is not a mechanical phenomenon as seen in vaso-dilatation, but is (at least in part) humoral.

(*d*) *Vaso-dilatation and hypotension.*—In heat-stroke or sunstroke vaso-dilatation and hypotension are classic and evident in man. This vaso-dilatation is also present in rats, mice and rabbits under experimental conditions.

As to the development of a tolerance of heat the results are recorded as follows : out of 13 experiments 10 showed that animals exposed

a second time to extreme heat after a sufficient lapse of time (20 days) develop a resistance greater than that of controls, a resistance in certain experiments more than double.

ii. Rats and mice were exposed, in glass cases, to the direct effects of sunlight, or were placed in a stove under dry heat. Certain drugs —oil of camphor and caffeine—were found to prolong life ; but only for short periods [this *Bulletin*, Vol. 9, pp. 173 and 174, Bram, Hanson ; Vols. 11, 13, 16, Koizumi].

iii. Records a number of experiments showing that mice can be gradually made to tolerate exposure to direct sun rays or to artificial heat. The blood of resistant animals was injected into mice and rats ; but there was no proof of any immunity.

J. H. Tull Walsh.

Alexander (R. H.). **Notes on Cases of Heatstroke occurring in British Troops Stationed at Basra, Mesopotamia.**— *Jl. Roy. Army Med. Corps.* 1922. May. Vol. 38. No. 5. pp. 358–366. With 2 charts in text.

The author was in charge of No. 3 British General Hospital, Basra, during the hot seasons of 1920 and 1921. The climatic and meteorological readings for these years do not differ much from those recorded in the careful investigation recorded in this *Bulletin*, Vol. 16, p. 53 [Willcox ; Hill].

All the cases—20 in 1920 and 35 in 1921—were of the paralytic type, with high temperature (about 107° F. in rectum), coma, contracted pupils and stertorous breathing, and with cardiac depression leading in most of the fatal cases to oedema of the lungs. This cardiac weakness remained as a serious accompaniment of convalescence, and an unstable temperature, insomnia and loss of mental concentration and severe headaches persisted until the cooler weather set in.

Treatment.—Each case was covered with a sheet and iced water played on to him and his body rubbed with ice. Quinine bihydrochloride, 10–15 gr., was given intravenously as a routine. Camphor (2 gr.) was used as a heart stimulant and digitalin 1/100 gr. was frequently given with it. For wild delirium chloroform was the only efficacious treatment, and morphia (¼ gr.) was found to control further convulsions and delirium. Alcohol has a marked effect on prognosis. In 15 per cent. alcoholics and 18 per cent. total abstainers (accurate data of the rest could not be obtained) the mortality was 100 per cent. and nil respectively.

Table IV.

Maximum Temperature (rectal).	Number of Cases.	Number of Deaths.
110° + F.	14	6
109°–110° F.	12	5
108°–109° F.	14	5
107°–108° F.	12	2
Cases admitted dead where temperature had not been recorded ..	3	3

TABLE VI.—Results.

	Recovered.	Died.
A.—Rapid recovery from acute symptoms .. Eleven of these cases were treated at bath stations and hyperpyrexia was reduced before admission to hospital.	27	—
B.—Remaining dangerously ill for over 24 hours .. In three cases a favourable prognosis could not be made for over a week.	7	—
C.—Rapidly fatal cases .. .. Of these 6 were admitted dead. „ 5 died within 1 hour. „ 2 „ „ 8 hours.	—	13
D.—Ending fatally after several days' illness .. 2 cases died on the 2nd day. 1 case „ „ 3rd „ 2 cases „ „ 4th „ 2 „ „ „ 5th „ 1 case „ „ 11th „	—	8*

* It was most disappointing losing these cases as, although they appeared hopeless, one always trusted that they might rally as did the cases under heading B.

J. H. T. W.

GIGLIOLI (G.). **Acclimatization and Sunstroke.**—*Jl. Trop. Med. & Hyg.* 1922. June 15. Vol. 25. No. 12. pp. 185–188.

A compiled review of the effects of heat on the diseases and possible acclimatization of Europeans in tropic lands.

[Heat stroke is not synonymous with tertian ague as suggested.]

J. H. T. W.

LEGER (Marcel). **Insolation mortelle chez le Chimpanzé et altérations morphologiques de son sang.**—*C.R. Soc. Biol.* 1922. July–Sept. Vol. 87. No. 28. pp. 874–876.

The author records the unfortunate destruction of three chimpanzees by sunstroke. The animals (*T. niger*), one adult and two young, were carelessly left in a yard of the Institute of Biology, Dakar, from 12 to 2 p.m. They were tied and could not move into any shade which the walls might have afforded. Their cries attracted attention, but too late, and the chimpanzees passed from convulsions to coma and death. Cold baths and cold compresses on the head produced no effect. Rectal temperature was 40° C. 15 minutes after death and still 38·9° C. after two hours. The autopsies showed no lesions except intense congestion of the organs, especially the lungs; there was fluid effusion in the pericardium [*cf.* Pathology of Heat-Stroke, this *Bulletin*, Vol. 16, pp. 58–59 (DYKE)].

J. H. T. W.

FUNAIOLI (Giulio). **Il colpo di calore nei lattanti sani in Tripolitania.**—*Arch. Ital. Sci. Med. Colon.* Tripoli. 1920. Feb. & Apr. Vol. 1. Nos. 2 & 4. pp. 76–82; 145–154.

The author believes that extreme heat and sunstroke produce in healthy infants vomiting, diarrhoea and marked dyspepsia with high temperature.

J. H. T. W.

BLACKWATER FEVER.

ESQUIER. **La fièvre bilieuse hémoglobinurique ; recherches étiologiques ; essais thérapeutiques.**— *Arch. Méd. et Pharm. Nav.* 1922. Jan.–Feb. Vol. 112. No. 1. pp. 5–46.

This paper is based on observations made on 23 cases of blackwater fever at Dakar, 20 being treated between August, 1918, and March, 1920, in the hospital of the Marigot ; all were young European sailors.

The author first deals with the question whether blackwater fever is a manifestation of malaria, whether it is paramalarial, or whether it is independent of malaria. He points out in all countries where blackwater occurs malaria is endemic, but that, on the contrary, blackwater is not always found in malarial districts, *e.g.*, it is unknown in Algeria and in Italy [*sic*] and has only recently been recorded from the Indies, Solomon Islands and New Hebrides. This raises the question whether the two diseases are not superimposable, the region infested by blackwater being less vast than that by malaria.

In only 37 per cent. of the cases examined were parasites found in the blood. *P. falciparum* was found in all, and sometimes *P. vivax* also and even *P. malariae*, so that it cannot be argued that blackwater is simply determined by the agent causing malignant tertian fever. Undoubtedly, the great majority of cases of blackwater have had previous malaria, but a few cases are recorded in which there was no antecedent malaria, and one of the author's cases belonged to this category, but it is extremely difficult to be certain of this, as the absence of typical attacks of fever does not necessarily mean freedom from malarial infection. The author believes that there is really a malarial substratum in blackwater fever. It is not necessary, however, to be an old colonial to contract blackwater fever. The cases observed at Dakar have almost all been in men recently disembarked, *i.e.*, less than a year. The degree of malarial intoxication varies greatly. So far as one could judge, three of the cases suffered profoundly from malaria, 18 in a moderate degree, and two slightly. As the result of observing 2,500 cases of malaria, the author arrived at the conclusion that cachectic and profoundly anaemic individuals escape, whilst those who suffer only moderately are attacked with blackwater. In a table statistics are given of the total strength and of the number of cases of malaria and of blackwater fever during the years 1904–20, from which it is seen that the number of cases of malaria has inconstant relation to those of blackwater. The majority of cases of blackwater fever occurred after the rains during the cold season, viz., December to February.

Regarding the differential leucocyte count in blackwater fever, the author found that at the beginning of the disease the formula was almost normal and that then the polymorphonuclear leucocytes decreased and the lymphocytes increased, and finally the reverse occurred, until, after the attack, the formula again became normal ; the eosinophiles were scanty during the attack.

The next section is devoted to a summary of some of the theories that have been advanced to explain the haemolysis, but the author does not add anything new to this aspect of the problem. Regarding the part played by quinine, Esquier considers that there occur undoubted cases of quinine haemoglobinuria having no relation to blackwater, and that although it is possible that in certain cases of malaria quinine may determine a blood shock leading to blackwater, yet in the great majority of cases the condition is not precipitated by this drug.

The question of the existence of a specific infective agent capable of determining a haemoglobinuric paroxysm in a malarial subject is next considered, and the various previous observations along this line referred to—particularly the bodies in the large mononuclear cell described by LEISHMAN, and the spirochaetes found in the blood of a blackwater case by SCHÜFFNER. The author never succeeded in finding spirochaetes in the blood in his cases, but did find in the liver of one case microorganisms bearing a close resemblance to the ictero-haemorrhagic spirochaetes, some of which were inside macrophages and had a length of 22–24 μ. It remains to determine the true nature and rôle of the organisms.

The last section deals with various attempts at therapy.

The conclusions are: Blackwater fever is conditioned by the existence in the patient of a malarial substratum. There are, however, between blackwater and malaria, beside clinical symptoms, profound differences (inconstant parasite findings, special leucocyte formulae, failure of the parallelism in the endemo-epidemic development of the two affections, etc.).

Quinine cannot be regarded as a necessary or sufficient cause of blackwater.

The haemolytic shock is determined in malarial subjects by an exogenous or endogenous cause which is still unknown, and is perhaps an infective agent associated with malaria.

In addition to purely symptomatic treatment, the following are of advantage:—

Injections of serum to which glucose or lactose is added.

Injections of horse serum.

Transfusion of blood in cases of extreme anaemia.

W. Yorke.

GIBLIN (W. E.). **Some Clinical Observations of Blackwater Fever in Papua, and their Bearing on its Aetiology.**—*Jl. Trop. Med. & Hyg.* 1922. July 1. Vol. 25. No. 13. pp. 212–214.

The conclusions are:—

"1. That malaria is an essential contributing cause in the production of the haemolytic factor.

"2. That the haemolytic factor has still to be demonstrated.

"3. That it is impossible to define blackwater fever with any definite precision as it is not a specific disease, but rather a symptom complex; in fact, a complication of malaria."

W. Y.

WIGGINS (C. A.). **Report on Blackwater Fever in Uganda for 1921.**—*Uganda Protectorate Ann. Med. & San. Rep. for the Year ended 31st December, 1921.* pp. 54–58.

During 1921 there were 62 cases of blackwater fever with 15 deaths. Twelve of these cases occurred among Europeans, 49 among Asiatics, and 1 was a native case in a child aged $2\frac{1}{2}$. In a table the cases are grouped according to the length of residence in the tropics. Previous malaria is reported with regard to 54 of the cases and nothing is known on this point in the other 8 cases. In 21, there was a history of previous attacks of blackwater fever. Jaundice is stated to have occurred in 35 of the cases, relapses of haemoglobinuria in 7 and suppression of urine in 7. The duration of the haemoglobinuria in various cases is given in a table.

W. Y.

Salvioli (Gaetano). **Beitrag zur Histopathologie der Niere bei Schwarzwasserfieber.** [On the Minute Pathology of the Kidneys in Blackwater Fever.]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1922. Vol. 26. No. 1. pp. 6–17.

The author has examined microscopically the kidneys of 13 cases of blackwater fever dying at the Hamburg Tropical School. In addition to the ordinary method, Miller's method of elective staining of haemoglobin was used. According to this author, only formalin or chromic material is suitable and preferably that fixed in formalin or Orth's mixture and subsequently hardened in Müller's fluid.

The sections were stained at least 48 hours in Delafield's haematoxylin and then differentiated in dilute (1 in 1 of distilled water) Weigert's borax ferrocyanide of potassium solution. There resulted complete decolorization of albumin and blood corpuscles, so that only pure haemoglobin remained stained. The sections in chromic material were deep blue in colour, while those of formalin material were blackish. In Salvioli's experience, only moderately good results were obtained with formalin material stained by Miller's method, but better results were given by first treating the formalin, or otherwise fixed, material with Müller's fluid for two or three days ; in this way, the haemoglobin, after differentiation, stained dark blue violet.

In the kidneys of other diseases which simulate the histopathology of blackwater closely, the dark blue violet staining was not observed.

The best picture of the Berlin blue reaction was obtained in alcohol fixed material, and the quickest and most certain method was that of Ziemann, viz., treating the section with a warm solution of one per cent. HCl in glycerine after immersion for some minutes in ferrocyanide of potassium solution.

Details of the appearances found in the 13 cases are given.

The following facts were made out :—

1. In general, signs of nephritis were absent.

2. As a rule, the only changes present were those which resulted from blocks due to the mechanical action of the contents of uriniferous tubules.

3. The iron reaction is almost always positive in the convoluted tubules.

4. The use of the haemoglobin stain of Miller permits the conjecture that the excretion of haemoglobin takes place first in the convoluted tubules and in the loops of Henle.

5. Changes in the corpuscles, haemorrhages, malaria parasites and pigment were not observed.

6. By the investigation of the kidneys with Miller's method and the Berlin blue reaction, a differential diagnosis between blackwater and yellow fever can be made.

W. Y.

i. Esquier. **Note sur le traitement de la fièvre bilieuse hémoglobinurique.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1919. Nov. Vol. 1. No. 4. pp. 3–6.

ii. Esquier & Godillon. **De la transfusion du sang citraté dans la fièvre bilieuse hémoglobinurique.**—*Ibid.* 1920. Apr. Vol. 2. No. 4. pp. 90–93.

i. Between November, 1918, and August, 1919, the author saw 15 cases of blackwater fever amongst young marines, none of whom had lived more than a year at Dakar ; of these, two cases ended fatally.

The average number of marines at the port during the period was 450 ; the very high proportion affected with blackwater is to be explained by the enormous amount of malaria amongst ships' crews at the harbour. As the result of observations on the treatment of these cases, the author believes that benefit accrues from subcutaneous injections of distilled water and especially from subcutaneous injections of about 20 cc. of horse serum.

ii. Details are given of three cases of blackwater fever observed by the authors. The first died and the other two recovered owing, the authors believe, to transfusion of citrated blood—400 gm. in one case and 300 gm. in the other.

W. Y.

LEJEUNE (E.). **Transfusion sanguine après hémoglobinurie grave.** —*Ann. Soc. Belge de Méd. Trop.* Brussels. 1921. Dec. Vol. 1. No. 3. pp. 299–300.

As a last resort, a patient (European, aged 34) who after an attack of blackwater fever was in a desperate condition was transfused with human blood. At the time of the injection the patient was gravely ill, very feeble, delirious, and the pulse, notwithstanding stimulants, hardly perceptible ; the red cell count was only 950,000. Blood (500 cc.) was withdrawn from a healthy European into a bowl containing 50 cc. of 3 per cent. citrated saline solution and was then slowly injected into the median basilic vein of the patient by means of a salvarsan apparatus. No ill effect followed the operation and almost immediately a great improvement in the patient's condition resulted.

W. Y.

i. KERNEIS & MORIN. **Un cas d'anémie profonde suite de fièvre bilieuse hémoglobinurique guérie par une transfusion sanguine.**—*Bull. Soc. Méd.-Chirurg. française de l'Ouest-Africain.* 1921. Mar. Vol. 3. No. 13. pp. 32–34.

ii. —— & ——. **Un cas de fièvre bilieuse hémoglobinurique survenue chez un paludéen au cours d'un traitement par le cyanure de mercure.**— *Ibid.* p. 31.

iii. CRICHLOW (Nathaniel). **The Treatment of Blackwater Fever.**— *Jl. Trop. Med. & Hyg.* 1921. Dec. 15. Vol. 24. No. 24. pp. 318–321. With 2 charts in text.

i. Details are given of a case of blackwater which, when in a very critical condition, was treated by transfusion of 200 gm. of citrated blood obtained from his brother ; recovery resulted.

ii. The patient who had lived for 12 years in the Colonies was given, as treatment for syphilis, an intravenous injection of 0·01 gm. cyanide of mercury on each of three successive days : the following day he suddenly developed blackwater fever. Two days later the symptoms subsided and recovery resulted.

iii. The author describes a method of treatment adopted by him in a number of cases of blackwater fever, but does not produce any evidence that his procedure is of any special value.

W. Y.

ROY (Suresh Clandra). **Blackwater Fever as it occurs in the Duars and its Treatment.**—*Indian Med. Gaz.* 1922. Mar. Vol. 57. No. 3. pp. 83–85.

PELLAGRA.

KHALIL (M.). [Translated from the Original by.] **The Earliest Account of Pellagra in Egypt from the Writings of an Egyptian Physician, A.D. 1846.**—*Proc. Roy. Soc. Med.* 1922. Aug. (Sect. of Trop. Dis. & Parasit.) Vol. 15. No. 10. pp. 45–47.

Ahmed Ibn Hassan EL-RASHIDY published a volume in 1846 dealing with diseases of the skin. In this book there is a description of pellagra and, according to the author of the paper under review, this is the first account of the disease in Egypt. Extracts from the work are given and there can be no doubt that the author knew just as much, or as little, about pellagra as we do now. As etiological factors maize, insanitary houses and starvation are mentioned, and for treatment good food is the outstanding remedy.

A. D. Bigland.

WHEELER (G. A.). **Treatment and Prevention of Pellagra by a Daily Supplemental Meal.**—*Jl. Amer. Med. Assoc.* 1922. Apr. 1. Vol. 78. No. 13. pp. 955–957.

This paper is a record of the work done at a Pellagra Outpatient Clinic which was established in connexion with the Pellagra Hospital at Spartanburg, S.C., in November, 1914. The only treatment administered was a daily supplemental meal consisting of fresh meat, milk, vegetables, fruit, bread and butter. Apart from the meal the patients "were allowed to follow their individual inclinations and habits, dietetically and otherwise."

From November 1, 1914, to July 1, 1920, 105 cases were under treatment. Of these 24 were excluded because of the short period of treatment and a further 27 patients are not included because they presented no rash, though they were, none the less, undoubted pellagrins. Of the 54 remaining patients 14 were males and 40 females, while all except 2 were whites. "Of a total of 48 anniversaries passed by this group of patients from the time of their first attacks to the date of admission to treatment, there had been 416 (9·4 per cent.) regular, consecutive, annual recurrences, while for a total of 25 anniversaries passed under treatment there was not a single recurrence."

The author shows that such a daily supplementary diet as described is sufficient to prevent recurrences of pellagra. It would appear also that for return of symptoms "a deprivation period of less than five months is indicated."

A. D. B.

DEVOTO (Luigi). **La pellagra in Lombardia e nella Venezia Tridentina dal 1910 in poi.** [Pellagra in Lombardy and Venezia Tridentina since 1910.]—*Riv. Pellagrolog. Ital.* 1922. Jan.–Apr. Vol. 22. No. 1–2. pp. 4–6.

Pellagrin peasants, after living for some years beyond the Brenner without exhibiting any signs of pellagra, on return to their native country again showed symptoms of the disease after the use of sound maize. As a result of the investigations of BEZZOLA the campaign against pellagra was not limited to abolishing damaged maize but extended to sound also as an article of diet in Venezia Tridentina. Pellagra rapidly disappeared. In 1899 there were in Lombardy some 20,000 pellagrins and in Trentino 10,000. In 1920 not a single fresh case was recorded in the latter.

The original statement of LOMBROSO should, therefore, be modified. In practice "the use of sound maize may light up the disease in an ex-pellagrin (*i.e.*, one who previously has shown symptoms but has been free from them for some time) or aggravate the condition if actually present." In theory "the prolonged and intensive use of sound maize can give rise to pellagra."

During the war monotony of diet led in these districts to symptoms such as scurvy, oedema and haemorrhages, but not to pellagra, according to SICCARDI.

H. Harold Scott.

DE PROBIZER (Guido). **Studio sulla pellagra nelle popolazioni evacuate dal Trentino.**—*Riv. Pellagrolog. Ital.* 1921. Jan.–Apr., May–Aug., & Sept.–Dec. Vol. 21. Nos. 1–2, 3–4, & 5–6. pp. 7–12; 11–14; & 9–21.

When Italy declared war in 1915 the district of Rovereto, being in the war zone, was evacuated in all haste by military orders. A part of this civil population coming from the commune of Trambilleno was directed to the district of Salisburg accompanied by the writer, under whose care and observation they remained during four years exile. He set himself to investigate what would be the effect of this change of habitat upon the exiled community which in its own home had been severely proved by the endemic of pellagra, as the following figures show :—

1896–1901 average incidence of pellagra	56	cases
Period.		
1904 incidence of pellagra	703	,,
1907 ,, ,, ,, ...	186	,,
1913 ,, ,, ,, ...	83	,,

The population of the commune of Trambilleno in the year 1910 was 1,558. It is clear that the bad conditions were rapidly improving in the year before the war but the above table could not lead to the supposition that from the year 1914 pellagra in this community would be practically unknown. Yet such was found to be the case throughout the war period. The writer compares the conditions of life in Trambilleno with those in Salisburg. On removal to Salisburg there was a change from a predominantly maize diet to a mixed diet containing at first only a proportion of maize of the best quality and later consisting of milk, bread, potatoes, macaroni, beans, etc.

J. Rosslyn Earp.

RAMOINO (Paolo). **Contributo alla conoscenza delle cause del Maidismo sperimentale.** [Contribution to our Knowledge of the Causes of Experimental Zeism.]—*Ann. d'Igiene.* 1922. Mar. Vol. 32. No. 3. pp. 201–207.

The experiments here recorded were instigated by those of BAGLIONI and his conclusions that maize is deficient in the alkaline salts which are present in green food. For these experiments the author employed four young guinea-pigs and four adults and gave them a maize diet which he "corrected" by the addition of cellulose, sodium chloride, calcium phosphate and water, The diet in fact was maize flour 100 gm., sawdust 30 gm. ("segatura di legno" for which was substituted in part "piallatura del legno"—fragments of wood shavings), sodium chloride 3 gm., calcium phosphate 4 gm., water 250 gm.

For two or three weeks before starting on this diet they were given bread and green food. The food was well taken in the early days of the experiment, but not later. The animals all, except one, progressively lost weight and lived for periods varying between 8 and 37 days. At the autopsies the intestinal mucosa was inflamed, the abdominal organs congested, especially the liver and kidneys, the stomach and intestines were stuffed with whitish pultaceous material.

The author concludes that the dietetic correction does not maintain life and that the symptoms produced do not greatly differ from those seen with a diet of maize alone.

H. Harold Scott.

Lustberg (Sam R.) & Birchett (J. A. K.). **The Breast Fed Pellagrin : Relation to the Avitaminoses.**—*Arch. of Pediatrics.* 1922. Apr. Vol. 39. No. 4. pp. 255–258.

Do breast-fed babies whose mothers are pellagrins become pellagrous themselves because of infection or because there is something lacking in their diet, *i.e.*, in their mother's milk ?

The authors reject the infection theory and support the deficiency view because these babies recover when a wet nurse is substituted for the mother and more quickly still if cow's milk and fruit juice are given in addition.

The milk of the mother in these cases contains the proper proportions of fat, carbohydrate and protein.

A. D. B.

Strong (Robert A.). **An Interesting Case of Pellagra in a Young Child.**—*Southern Med. Jl.* 1922. July. Vol. 15. No. 7. pp. 550–551. With 2 text figs.

A typical case of pellagra in a young child is described. The opportunity was taken of injecting 3 cc. of the spinal fluid into the "frontal convolutions" of two Rhesus monkeys. The results were negative even after the monkeys had been under observation for eight months.

A. D. B.

Wheeler (G. A.) & Goldberger (Joseph). **On the Probable Identity of the Chittenden-Underhill Pellagra-like Syndrome in Dogs and "Black-Tongue." With Report of Necropsy Findings in Two Cases of Black-Tongue.**—*Public Health Rep.* 1922. May 5. Vol. 37. No. 18. pp. 1063–1069.

In August, 1917, Chittenden and Underhill described a pellagra-like condition occurring in dogs fed upon a diet containing boiled peas, cracker meal and cottonseed oil.

The condition is as follows :—After a sudden onset of apathy and loss of appetite the dog presents curious buccal appearances, viz., masses of pustules upon the inner surfaces of the cheeks and lips and the edges of the tongue ; the mucous membrane of the mouth comes away in shreds when stroked with cotton ; intense salivation with foul smell ; the teeth remain solid and normal. Blood-stained motions are passed and death results. Some of the animals die rapidly in convulsions.

Those dying with the mouth condition and bloody diarrhoea present an intense haemorrhagic appearance of the lower bowel, while those

presenting convulsions only show one or two large ulcers in the duodenum.

The condition known as "black tongue" was first described in 1852 and was called "typhoid of dogs." SPENCER (1916) and CARY (1920) pointed out that this disease was really pellagra in dogs. The authors point out that "black tongue" has the same geographical distribution in the U.S.A. as has pellagra, that it occurs almost exclusively in the south and presents itself usually in the summer and autumn. It may occur more than once in the same animal. It appears certain that the condition described by CHITTENDEN and UNDERHILL is identical with "black tongue." A very full bibliography is given.

A. D. B.

i. GOLDBERGER (Joseph). **The Relation of Diet to Pellagra.**—*Jl. Amer. Med. Assoc.* 1922. June 3. Vol. 78. No. 22. pp. 1676–1680.
ii. MACNEAL (Ward J.). **Pellagra—Lantern Slide Demonstration.**—*Long Island Med. Jl.* 1922. June. Vol. 16. No. 6. pp. 225–227.
iii. PARRISH (C. C.). **Ueber Pellagraausbreitung vom Standpunkte des nordamerikanischen praktischen Arztes.**—*Dermat. Woch.* 1922. Aug. 19. Vol. 75. No. 33. pp. 817–821.

i. This is a review of recent work on pellagra given in the form of a lecture. No original work is described. The author concludes that "Diet controls the course and development of the disease" and that "the relationship thus disclosed probably depends primarily on a specific quality of the amino-acid make up of the protein supply."

ii. No new work is described.

iii. There is nothing new in this paper except the statement that pellagra can be checked by the administration of thymol and chenopodium oil. For this and other reasons the author is of the opinion that the disease is an infection.

A. D. B.

AVITAMINOSES.

OSBORNE (Thomas B.) & MENDEL (Lafayette B.). **Further Observations on the Distribution of Vitamin B in some Vegetable Foods.** —*Jl. Amer. Med. Assoc.* 1922. Apr. 15. Vol. 78. No. 15. pp. 1121–1122. With 1 fig.

Young white rats were used in feeding experiments carried out with the object of testing the vitamin B content of certain foods hitherto uninvestigated in this respect. Asparagus was found to be exceptionally rich in this substance, while celery, dandelion, lettuce and parsley contain "noteworthy amounts."

Asparagus, celery and lettuce when compared with apples, peas and grape juice were found to have a higher vitamin B potency "in terms of the edible product consumed."

A. D. B.

DAMON (Samuel R.). **Observations on the Distribution of Vitamin B.** —*Jl. Amer. Med. Assoc.* 1922. July 8. Vol. 79. No. 2. pp. 128–129. With 2 charts.

The use of beef extract in convalescence is almost universal. It is important, therefore, to ascertain whether vitamin B is present in such extracts, because of the effect which this vitamin has upon appetite and food intake.

Feeding experiments were carried out on young rats with this end in view. The author finds that " commercial beef extract and peptone are devoid of the water-soluble vitamin B."

A. D. B.

Ghose (Sadhindra Nath). **The Examination of Some Indian Foodstuffs for their Vitamine Content.**—*Biochem. Jl.* 1922. Vol. 16. No. 1. pp. 35–41.

Samples of pure Indian " ghee " were found to be as good sources of vitamin A as pure butter. Remelted ghee and adulterated ghee were not satisfactory in this respect.

Coconut oil and pure mustard seed oil gave growth in rats when given in large amounts (10–20 per cent. of the basal diet). Various lentils showed good quantities of vitamin B. Pure Indian flour was deficient in vitamin B, but the cruder varieties appeared to be more satisfactory.

A. D. B.

Rolland (O.) & Jouve (A.) **Les éléments vitaminiques peuvent-ils être stabilisés et conservés ?**—*Gaz. des Hôpit.* 1922. Apr. 29. Vol. 95. No. 33. p. 534.

Vitamins do not keep well because of the action of certain oxidases. Acids, even in weak dilution, have the power of inhibiting this action. The authors used their vitamin extract Biotose (*Gaz. des Hôpit.*, Jan. 21, 1922, No. 6) and compared the results of a fresh preparation with those of one 11 months old having an acidity of 0·21 per cent. citric acid. Starved pigeons and guinea-pigs recovered rapidly when fed with the recent and the old extract. It seems, therefore, that small quantities of acid have a preservative power over vitamin preparations.

A. D. B.

i. Seidell (Atherton). **Improved Method for the Preparation of Vitamine-Activated Fuller's Earth.**—*Public Health Rep.* 1922. Apr. 7. Vol. 37. No. 14. pp. 801–803.

ii. ——. **A Physiological Test for the Activity of Vitamine Preparations.** —*Ibid.* June 23. No. 25. pp. 1519–1523.

i. The author describes a new method for the preparation of vitamin-activated fuller's earth. The procedure depends upon the work of Osborne and Wakeman, who found that when " fresh yeast is added to boiling water, acidified with 0·01 per cent. acetic acid, the yeast cells are disrupted, the protein is coagulated, and the vitamin set free to enter the aqueous solution." For full particulars of the method the original note should be consulted. The results claimed are that a much better preparation is obtained and that the technique is a great improvement as regards time and trouble.

ii. Pigeons are fed upon polished rice, but they are given also on alternate days " activated solid " (*i.e.*, vitamin-activated fuller's earth) in doses just sufficient to prevent loss of weight. The birds are in this way brought into a state of, what may be termed, vitamin equilibrium. If now the " activated solid " be replaced by the vitamin sample under observation there will be a sudden change if the substance tested is deficient in vitamin. Within ten days or so the pigeons

are ready for another test and the procedures can be carried on in this way for many months. The method is described in considerable detail and in conclusion the author discusses the value of nitrogen estimation of vitamin extracts.

A. D. B.

ZILVA (Sylvester Solomon). **Conditions of Inactivation of the Accessory Food Factors.**—*Biochem. Jl.* 1922. Vol. 16. No. 1. pp. 42–48.

This paper is summarized as follows :—

" 1. The fat-soluble factor was destroyed in cod-liver oil by exposing it to ozone in the dark at ordinary temperature and by bubbling air through it at 120°.

" 2. The exposure of autolysed yeast juice to ozone in the dark did not destroy the activity of its water-soluble factor to any appreciable extent.

" 3. The exposure of decitrated lemon juice to ozone destroyed its anti-scorbutic activity. This was also destroyed by passing air through the solution at ordinary temperature.

" 4. Ultra-violet rays had no deleterious action on the accessory food factors in the absence of air.

" 5. Two hours' boiling did not destroy the anti-scorbutic potency of desiccated lemon juice in an atmosphere of carbon dioxide, whereas one hour's boiling in the presence of air destroyed its potency almost entirely.

" 6. Hydrolysis of decitrated lemon juice with hydrochloric acid for five hours impaired the anti-scorbutic activity of the juice. The juice, however, retained its activity to a very considerable extent."

A. D. B.

SCHEUNERT (Arthur) & SCHIEBLICH (Martin). **Studien ueber die Magendarmflora polyneuritischer Tauben und die Bildung antineuritischen Vitamins durch Darmbakterien.**—*Cent. f. Bakt.* 1. Abt. Orig. 1922. June 12. Vol. 88. No. 4. pp. 290–298.

It would appear from this paper that certain intestinal organisms grown upon vitamin-free media and administered to pigeons fed upon polished rice prevent or retard the development of typical neuritis.

A. D. B.

WEILL (E.), ARLOING (F.) & DUFOURT (A.). **Essai de traitement de la carence du pigeon par des cultures mortes ou vivantes de microbes intestinaux.**—*C.R. Soc. Biol.* 1922. June 10. Vol. 87. No. 21. pp. 50–52.

The attempt was made to arrest the " marche progressive " of starvation in pigeons fed upon decorticated rice by means of injection of certain intestinal bacteria. Both living and dead cultures were used for the purpose, but the wished-for results were not obtained.

A. D. B.

MOURIQUAND (G.) & MICHEL (P.). **Sur l'auto immunisation contre les régimes carencés.**—*C.R. Acad. Sci.* 1922. June 19. Vol. 174. No. 25. pp. 1639–1642.

It has been remarked that pigeons fed upon decorticated grains may show a regression of nerve symptoms after a period of paralysis has become established even though no alteration in diet has been

made. Successive relapses and recoveries may occur also without diet changes. It would appear that the animal immunizes itself, as it were, against the starvation diet. The author has noted the same phenomenon in experimental scurvy. It appears that thyroid extract and certain fatty bodies prevent this immunizing process and hasten the development of scurvy. The phenomenon is not noted in acute scurvy (HOLST & FROLICH), but only the chronic form.

A. D. B.

HESS (Julius H.), MOORE (Josiah J.) & CALVIN (Joseph K.). **Experimental Studies with Proprietary Vitamin Products.**—*Jl. Amer. Med. Assoc.* 1922. May 13. Vol. 78. No. 19. pp. 1441–1445. With 7 charts in text.

Three proprietary vitamin products were studied, viz., Metagen, Vitamon and a substance containing dried orange juice and desiccated pig's liver. Experiments were made also with "Yeast-Vitamin-Harris" tablets.

The first three products were found to contain insufficient anti-scorbutic vitamin to protect guinea-pigs from scurvy when given in the quantities recommended as protective in the case of infants. All the products contained water-soluble B vitamin, but were much less potent than fresh yeast, with the possible exception of the Yeast-Vitamin-Harris product.

The authors conclude with the remark: "Vitamins should be obtained from the dairy, the grocery and the market, not from the drug store."

A. D. B.

MCCOLLUM (E. V.) & SIMMONDS (Nina). **The Potency of Commercial Vitamin Preparations.**—*Jl. Amer. Med. Assoc.* 1922. June 24. Vol. 78. No. 25. pp. 1953–1957. With 9 charts in text.

The authors have examined certain commercial products advertised as containing vitamins. Vitamin B was the particular one for the presence of which tests were made, because this is the most stable vitamin and therefore the one most likely to be present.

The preparations tested were :—Mastin's Yeast Vitamon Tablets, Yeast-Vitamine (Harris), Double Strength Yeast and Iron Concentrate, Irving's Phos-Pho Vitamine, Alpha Vitamine Tablets, Super-Vitamin Tablets, and none of them was found to contain a satisfactory amount of Vitamin B.

[See HESS, MOORE & CALVIN above.]

A. D. B.

SHORTEN (J. A.). **The Role of Vitamins in Tropical Diseases.**—*Indian Med. Gaz.* 1922. May. Vol. 57. No. 5. pp. 164–169.

Merely a lecture based upon known facts.

A. D. B.

REVIEWS AND NOTICES.

WU LIEN TEH. [Edited by.] **Reports 1918–1922. North Manchurian Plague Prevention Service.**—354 pp. With 1 coloured plate, 36 figs., 1 map & 2 charts. 1922. Tientsin: Tientsin Press, Limited. [Price not stated.]

The greater part of this volume consists of an ably-written and detailed report on the plague epidemic in Northern Manchuria and Eastern Siberia during the winter of 1920–21. Since the great epidemic of pneumonic plague in 1910–11, Manchuria had been free from the disease; though sporadic cases, mostly of the bubonic form, were reported almost every year from some part of Siberia or Mongolia.

In October, 1920, cases of bubonic plague occurred at Hailar in the western part of North Manchuria, and close to the boundaries of Transbaikalia and Mongolia. The epidemic soon spread to the neighbouring towns, and the nature of the disease quickly passed through the septicaemic to the pneumonic form. By the end of January the disease had established itself in the town of Harbin, where about 1,300 people died. At Vladivostok, where the epidemic began in April and continued until August, about 500 deaths occurred. To the efficiency of the Plague Prevention Service may be attributed the fact that this epidemic was a much smaller one than that of 1910–11. In the latter nearly 60,000 persons died in Manchuria and North China; in the epidemic considered in this report about 9,000 fatal cases occurred.

The connexion of the tarabagan, or marmot (*Arctomys bobac*) with the disease is considered at some length; the evidence incriminating this animal is not at all strong. Some of the earlier cases of bubonic plague at Hailar were among coolies employed in a skinning factory, and this town and Manchouli (where there were about 1,000 deaths) are the two centres to which the Russian and Buriat trappers bring their skins. But no more direct evidence than this seems to be available. There is no doubt that sporadic cases of natural plague do occur among the marmots (although very few indeed have been observed), but no epizootic at all comparable to that which occurs among rats, has been seen among them. The Staff of the Plague Prevention Service found experimentally that the tarabagan may suffer from an acute form of plague, a chronic localized form, a pneumonic form, and an intestinal form. The tarabagan can be infected experimentally by feeding it on plague material; but this cannot be of any importance in nature, as the animal is purely herbivorous.

The report contains very interesting sections on the clinical observations made at the various hospitals and on the pathological findings in a series of 34 post-mortem examinations, 24 of which were of cases of the pure pneumonic form. In spite of their urgent duties connected with the control of the epidemic, the medical staff managed to carry out a number of scientific observations and much laboratory work. Two observations on healthy "carriers" among the "contacts" of pneumonic plague cases are important. These persons had plague bacilli in their sputum, as virulent as usual for guinea-pigs, up to five days after the last contact with a patient, although they never showed any clinical signs of infection. Further interesting experimental work was done on the vitality of the plague bacillus in sputum when exposed to direct sunlight, to diffused light and to low temperatures; also on the effect of various disinfectants.

Lack of space forbids more than a mere reference to the graphic description which is given of the dark and dirty, half-underground, over-heated and unventilated barracks in which the mining coolies live at Dalainor; to the ignorance and lawlessness of many of the people, who often violently opposed any antiplague measures; and to the difficulties of dealing with "contacts" where no hygienic accommodation was available and

where the atmospheric temperature was as low as —25° C. That so much good work was accomplished in these difficult circumstances is a splendid testimony to the tactful resource and devotion of the members of the Plague Prevention Service. The report contains many photographs, illustrating different aspects of the epidemic. There is a sketch map of the plague region at the end of the book; unfortunately, the scale of the map is not given.

H. J. Walton.

MITCHELL (J. M.), ASHESHOV (I. N.) & RICHARDSON (G. P. N.). **Typhus Fever with Special Reference to the Russian Epidemics.**—48 pp. With 2 text figs. 1922. London: Baillière, Tindall, & Cox, 8, Henrietta Street, Covent Garden. [Price 3*s.* 6*d.* net.]

This small book contains an account of the experiences as regards Typhus Fever of the British Military Mission serving with General Denikin's Army.

The chaotic condition of a country during and following the retreat of a defeated force is vividly painted.

The clinical course of the disease is clearly described and complications and sequelae are detailed.

In the chapter on general treatment, the precautions necessary to secure adequate delousing of patients before admission to the hospital ward are duly emphasized, and the importance of good nursing and its effect upon the progress of the cases is awarded a justly prominent place.

In the chapter on Special Treatment non-specific serum therapy is very highly recommended. One, however, misses any reference to the work of DANIÉLOPOLU, but it is probable that an account of his methods did not reach Russia in time for their trial. The figures recorded by him in his book "Le Typhus exanthématique," published in 1919, of results obtained by intravenous injection of a solution of chlorine in hypertonic saline (see Review, this *Bulletin*, Vol. 18, p. 305) are remarkable, and this method of treatment seems to be well worthy of further trial.

The chapter on "Preventive Inoculation against Typhus Fever" is by Dr. I. N. Asheshov, and gives details of the method for the preparation of a "vaccine," *i.e.*, material containing killed virus. This consists of blood of a typhus patient, taken under aseptic precautions between the fourth and eighth days of the disease. After defibrination the blood is transferred to sterilized ampoules of 5 or 10 cc. capacity, and subsequently inactivitated at from 56° to 58° C. for one hour. A complete course of prophylactic inoculation consists of three injections, first 1 cc., second 2 cc. and third 2 to 5 cc. of defibrinated and inactivated blood at intervals of 4 to 5 days. No serious general reaction in 600 cases thus inoculated was observed.

The results were promising and are detailed in the *Lancet* for April 9, 1921, p. 742. Up to the present, however, this method of protection has had but a limited trial.

G. E. F. Stammers.

RIVERS (W. H. R.), M.D., F.R.S. [Edited by.] With a Preface by Sir Everard Im THURN, K.C.M.G., K.B.E., C.B.—**Essays on the Depopulation of Melanesia.**—pp. xviii + 116. 1922. Cambridge University Press. [Price 6*s.* net.]

Most of the contributors to this extremely interesting little volume on the depopulation—to the imminence of extinction—of Melanesia are agreed in recognizing another deplorable illustration of the effects of the introduction, by Europeans, into virgin soil, of diseases and poisons—chiefly infectious diseases—and of customs conducive to their spread. Among the diseases "pulmonary complaints" have an ominous significance, and among the accelerative customs the adoption of European clothing.

which is never taken off, even when, as often, it is wet through. In the case of Melanesia "recruiting" of labour—which also has ominous suggestions—has been, in the past more than recently, a contributory factor.

Two writers, Dr. Rivers and Dr. SPEISER, while admitting all this immediate causation, go deeper for underlying and inciting causes. Dr. Rivers' argument is that owing mainly to the suppression of head-hunting, which as a religion was their bread of life, the Melanesians have lost all interest in living · in apathetic torpor they succumb to every new infection ; nor care they to "bring children into the world only to work for the white man." Dr. SPEISER sees Carlyle's Niagara in the disruption of all tribal ties and restraints consequent on decline of the authority of the chiefs and contempt for the ancestral shrines—all this being indirect effect of intercourse with the European "superman."

However, there is a bright lining to the cloud, if only it be appreciated in time. Islands where Christianity has been introduced without disparagement of the authority of the native chiefs, and without unnecessary disturbance of native customs and habits, and has been really taken to heart by the people—such islands have survived and are recovering from the impact of European civilization.

Messrs. Rivers and SPEISER in this vindication of religion and discipline have, like Orlando, wrestled well and overthrown more than the enemies of the Melanesian population.

A. Alcock.

WELLCOME BUREAU OF SCIENTIFIC RESEARCH. **Guide to the Wellcome Museum of Tropical Medicine and Hygiene.**—14 pp. With 4 illustrations. Wellcome Bureau of Scientific Research, 25, 26 & 27, Endsleigh Gardens, London, N.W.1.

By means of photographs, drawings, diagrams, and models, conveniently aided here and there by significant specimens, the divers particulars of the science and art of tropical hygiene and tropical medicine are, with infinite skill and pains, generously set forth in due order, course, proportion, and relation in this unique museum.

There is a section of hygiene ; a section of tropical diseases that are inoculated by the agency of arthropods that bite ; another section of tropical diseases in which infection comes mainly by the intestinal tract ; another section in which infection follows mainly from contact ; and a section including food-deficiency diseases, pathological miscellanea and infecta, and an index of medical zoology.

To take the item "malaria" as an illustration. In the tropical diseases section we see the whole chain of ideas evoked by the idea of malaria—parasite, mosquito, condition of sick man, mosquito haunts and breeding places, drainage, reclamation, mosquito nets, quinine, cinchona cultivation, etc.—all graphically developed ; and in the hygiene section we see the graphical representation of another line of related experiences—drains, levelling, training, oiling, natural enemies, propaganda, etc.

Certainly no educated man who intends to reside in the tropics should miss seeing this wonderful museum ; nor will any medical man, however expert, fail to get inspiration from it.

A. Alcock.